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CHINA REPORT

AGRICULTURE

No. 69

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I. GENERAL INFORMATION

VICE FORESTRY MINISTER SUGGESTS PLANTING QUICK-GROWING TREES

OW151645 Beijing Domestic Service in Mandarin 1200 GMT 14 Jan 80 OW

[Interview with Wang Bin, PRC vice minister of forestry, by station reporter--recorded; date not given]

[Excerpts] The Ministry of Forestry recently held a discussion meeting on forestry in Beijing. At the meeting, representatives from the forestry bureaus of 15 provinces, municipalities and autonomous regions studied and discussed the question of planting quick-growing, high-yielding trees and formulated a preliminary plan for this purpose. During the meeting, this station reporter interviewed Vice Minister of Forestry Wang Bin on the question of how to speed up the development of forestry to meet the needs of national construction and the people's livelihood. The following is the recorded interview:

[Reporter] Comrade Wang Bin, would you please tell us about our country's current situation in forestry? How can we speed up the development of forestry to meet the needs of our country's four modernizations?

[Wang Bin]: Yes, I am glad to tell you about the situation. Our country has made tremendous achievements in forestry since the founding of the PRC. The country has since then afforested more than 420 million mu. Over 11.9 billion trees have been planted near villages, along roads and streams and by houses. The forestry has produced more than 850 million cubic meters of lumber and large quantities of other forest products. The development of forestry has played an important role in improving the natural features of our country, promoting agricultural production and livestock raising, supporting national construction and meeting needs of the people.

However, the development of forestry is still far from meeting needs of the developing national economy. The percentage of forest cover and average per-capita forest acreage rank our country 120th among 160 countries and regions in the world. Our country's lumber is in short supply in the national economy. We should do a lot of work in order to solve this problem. On the one hand, we should keep implementing a series of policies on the development of forestry and mobilize the broad masses of people throughout the country to plant trees so as to expand forest cover in our country. On the other hand, we should give full play to the role of the state tree farms as the mainstay, make vigorous efforts to plant quick-growing trees and build quick-growing, high-yielding tree centers.

[Reporter]: Comrade Wang Bin, it is very important to build quick-growing, high-yielding tree centers. What has the Ministry of Forestry planned to do or what measures has it taken in this regard?

[Wang Bin]: We recently held a discussion meeting attended by representatives from 15 provinces, municipalities and autonomous regions at which we discussed the question of planting quick-growing, high-yielding trees in some provinces, municipalities and autonomous regions. Our preliminary plan is to plant 10 million mu of quick-growing, high-yielding trees. When these trees grow to become useful timber in 10 to 15 years on the average, the 10 million mu of quick-growing, high-yielding trees will then produce 10 million cubic meters of lumber every year. At present, areas with favorable natural conditions, good transport service and the possibility of producing the desired results should be selected to build quick-growing, high-yielding tree centers. At the same time, state tree farms should designate certain areas to plant quick-growing, high-yielding trees when conditions permit. All state tree farms should turn into quick-growing, high-yielding tree farms step by step.

The following measures should be adopted:

1. It is necessary to persist in planting trees in a scientific way.
2. It is necessary to reform the management structure of state tree farms, to give them greater decision-making power in management, to strictly check on their economic results, to strengthen their management system and to raise their management level.
3. It is necessary to do a good job in solving the question of funds for the development of forestry.

It is a very arduous yet (?glorious) task to build quick-growing, high-yielding tree centers. We must make determined and vigorous efforts to carry out this task thoroughly and effectively so as to contribute to the realization of our country's four modernizations at an early date.

CSO: 4007

NATIONAL FORESTRY INSTITUTE SCORES SUCCESS IN RESEARCH

Beijing RENMIN RIBAO in Chinese 26 Nov 79 p 4

[Report by XINHUA NEWS AGENCY: "Forestry Research Is Back on Track"]

[Text] The China Forestry Scientific Research Institute has devoted the past 2 years following its reinstatement to eliminating chaos and restoring order on the forestry front, to consolidating and strengthening its scientific research work in accordance with the party's policies, thus opening up a new prospect for its research work.

The China Forestry Scientific Research Institute was inaugurated as an independent organization in 1958. During the Great Cultural Revolution, under the disruptive impact of the ultra-left line of Lin Biao and the "gang of four," the institute was abolished, almost all its research units were degraded, forestry scientific researchers were persecuted, and many scientists and technicians on this front were forced to change their occupations or transfer to other trades. The result was a serious damage to our country's forestry scientific research work. In the spring of 1978 following the downfall of the "gang of four," with the approval of the State Council, the institute was officially reinstated. Since then, it has regained the control of its subordinate units dedicated to research work on forestry, the timber industry, forestry chemical industry, semi-tropical and tropical forestry, rubber trees, and forestry mechanization, which fell into the hands of local authorities after they were degraded. Also rehabilitated were the forestry economic and information research units banned by the "gang of four." All those dismissed scientists and technicians have been requested to report back to their institute and return to their original posts. Victims to unjust, false and wrong charges have been rehabilitated. Technical positions have also been restored to over 920 institute scientists and technicians. Since the beginning of 1978, on the basis of technical examinations, some 304 apprentice-researchers have been promoted to the positions of assistant researchers and engineers and 15 others have become associate researchers and researchers. As a result of reorganization, a group of scientists and technicians and energetic young cadres who are familiar with science and technology have been appointed to the leadership positions.

In an effort to better serve scientific researchers, the institute has strengthened its political work and logistic support for them. Now under construction are dormitories for scientific and technological staff and nurseries for their children totaling 20,000 square meters in floor space. Newly built dormitories totaling 6,000 square meters in floor space are now being readied for occupation. Food service at the mess halls for workers and care for children at the kindergartens have been remarkably improved, along with other fringe benefits. All these can be combined to relieve scientists of their worry about the well-being of their families. As a result of the restoration of the scientific research system to the institute, the implementation of the party's policies and the consolidation of its research units, its forestry scientific research work is now back on track, thus boosting the morale of its researchers. During the past 2 years, the institute has produced over 60 good results in scientific research work on afforestation, timber industry, forestry chemical industry and forestry mechanization.

In an effort to meet the growing need for the modernization of forestry, in 1978 the institute established the South China Scientific Experimentation Bureau in the Tagang Mountains of Fenxi County, Jiangxi Province, the Tropical and Semi-tropical Precious Tree Saplings Scientific Experimentation Bureau in the Taqing Mountains of Guangxi Zhuang Autonomous Region, and the Scientific Experimentation Bureau for Modernization of Forestry in dry and desert areas in Inner Mongolia's Dengkou County. It is going to use these three bureaus as experimental bases for promoting achievements in scientific research. Since their inauguration, the three bureaus have drawn up and put into effect short-term and long-term scientific research plans. They have also established experimentation bases and seed cultivation research centers and have achieved initial success in research work.

9574

CSO: 4005

DOUBLE CROP RICE IN TRIPLE CROP SYSTEM, SOIL FERTILITY STUDIED

Beijing ZHONGGUO NONGYE KEXUE [Scientia Agricultura Sinica] in Chinese
No 1, Feb 79 pp 66-71

[Article by the Research Section of Hongguang Brigade, Xiaogan Commune, Deyang County, Sichuan Province and the Multiple Crop and Crop Rotation Research Group, Soil and Fertilizer Institute, Sichuan Academy of Agricultural Sciences]

[Text] Hongguang Brigade of Xiaogan Commune of Deyang County is situated in the northern part of the Chengdu plains. The land is flat and the underground water level is low. The soil is paddy rice soil of reclaimed tableland of yellow soil of original texture. The climate is mild. The annual average temperature is 16.1°C. Temperature drops rapidly in autumn. The number of frostless days a year is 278. Sunshine is scarce. Annual sunshine totals only 1,306 hours. Annual rainfall is about 1,000 millimeters distributed thus: dryness in winter, drought in spring, waterlogging in summer and plenty of rain in autumn.

Effective measures to increase the region's paddy rice yield include reforming the planting system, raising the multiple crop index and actively creating conditions according to local circumstances to develop double cropping of paddy rice. In 1969, the Hongguang Brigade began to test plant double crop rice and as of the present time double crop rice covers 57.7 percent of the planted area and production of food grains has increased by 56.2 percent. Yield of multiple planting constitutes 61.6 percent of the increase. The entire brigade produced over "2,000 jin" of grains per mu continuously for 7 years and over a ton of grains was produced in 2 of the 7 years.

As the area of double crop rice expanded and the number of years of such planting increased, the double crop paddy rice fields became hardpan to various degrees and fertilizers were repulsed during winter. Because of this, we began in 1974 to study the mutual relationships among crops in rotational planting under the triple crop system of double crop rice and the effect upon soil fertility. The results are presented in the brief report below.

Method of Experiment

The experiment combined the method of comparing small areas of the same field and observing typical fields and studied double crop rice in the triple crop system as a whole. The experiment involved fertilizing the soil and planting of various crops in five different orders, fertilization-rice-rice, rape-rice-rice, wheat-rice-rice with a high level of fertilization, wheat-rice-rice with an intermediate level of fertilization, and rotational crop-rice-rice (for the winter crop, green manure-rape-wheat were planted in consecutive years on a rotational basis). Each rotational planting cycle spanned 3 years. Each small area was 0.21 mu, planting was repeated twice. Samples were taken after harvesting of each crop. The content of whole nitrogen in the soil, the content of organic matter and the content of whole nitrogen in the plants were analyzed (using the Kjeldahl method to analyze the content of whole nitrogen and using the Qiulin method to analyze the content of organic matter), and the soil's capacity and weight, porosity and the percentage of clodding were determined.

Analysis of the Experimental Results

1. Effect of Double Crop Rice in the Triple Crop System Upon the Content of Organic Matter in the Soil

Double crop rice in the triple crop system increased the accumulation of organic matter in the soil (Table 1). It was determined that the content of organic matter in the soil of the winter crop was 2.12 to 2.26 percent and 2.28 to 2.38 percent in the soil of the late rice crop of 1974. In 1977, the content of organic matter in the soil of the winter crop showed an increase of 0.14 to 0.46 percent over that in 1974 and that of the late rice crop showed an increase of 0.27 to 0.42 percent over 1974. The average content of organic matter in the soil of the winter crop over 4 years was 2.40 to 2.44 percent. After planting double crop rice, the soil's content of organic matter increased by 0.16 to 0.17 percent. This may be due to the lengthy period of soaking of double crop rice in water (about 40 days more than that for single crop intermediate rice), causing an imbalance among the amounts of water, air and heat in the soil, limiting oxidation and decomposition of organic matter in the soil and leading to a low degree of humification.

Experiments conducted at the Yuchongqing County farm between 1962 and 1964 by the Multiple Crop Rotation Research Laboratory of the Pedology and Fertilizer Institute of the Sichuan Provincial Academy of Agricultural Sciences on 3-year double cropping of paddy and dryland crops show the curve tracing the increase and decrease of organic matter in the soil of double crop paddy and dryland crops is the reverse of the curve tracing the increase and decrease of organic matter in the soil of double crop rice of the triple crop system. The curve tracing the increase and decrease of organic matter in the soil of double crop

paddy and dryland crops shows a decrease in the amount of organic matter in the soil after planting intermediate rice and the curve shows an increase after planting of winter crops. Therefore, in production, various variations of crop rotation are used involving reasonable arrangement of two paddy rice crops and one dryland crop (double crop rice in a triple crop system) and one paddy rice crop and one dryland crop to facilitate decomposition and utilization of organic matter in the soil.

Table 1. Changes in the Content of Organic Matter in the Soil of Double Crop Rice in the Triple Crop System (%)

													(8)	(9)	
处 理 (3)	年 代 (2)	1974			1975			1976			1977			1977年 小春与 1974年 小春比	1977年 晚稻与 1974年 晚稻比
		(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		
		早稻	早稻	晚稻	小春	早稻	晚稻	小春	早稻	晚稻	小春	早稻	晚稻		
(10)肥稻Ⅰ		2.26	2.24	2.33	2.33	2.27	2.27	2.35	2.34	2.36	2.40	2.50	2.60		
(11)肥稻Ⅱ		2.25	2.30	2.34	2.32	2.28	2.26	2.39	2.31	2.36	2.39	2.48	2.62		
(12)平 均		2.26	2.27	2.34	2.33	2.28	2.27	2.37	2.33	2.36	2.40	2.49	2.61	+ 0.14	+ 0.27
(13)轮稻Ⅰ		2.10	2.21	2.37	2.19	2.24	2.34	2.39	2.41	2.39	2.52	2.51	2.63		
(14)轮稻Ⅱ		2.13	2.19	2.38	2.23	2.28	2.36	2.27	2.34	2.34	2.42	2.52	2.57		
(12)平 均		2.12	2.20	2.38	2.21	2.26	2.35	2.33	2.36	2.37	2.47	2.52	2.60	+ 0.37	+ 0.32
(15)油稻Ⅰ		2.23	2.27	2.34	2.18	2.24	2.38	2.38	2.40	2.48	2.48	2.53	2.62		
(16)油稻Ⅱ		2.24	2.24	2.24	2.20	2.25	2.20	2.39	2.37	2.48	2.52	2.61	2.76		
(12)平 均		2.24	2.26	2.28	2.19	2.25	2.29	2.39	2.39	2.48	2.50	2.57	2.70	+ 0.46	+ 0.42
(17)麦稻高肥Ⅰ		2.18	2.23	2.38	2.26	2.24	2.32	2.39	2.36	2.41	2.40	2.44	2.63		
(18)麦稻高肥Ⅱ		2.19	2.23	2.32	2.28	2.19	2.33	2.27	2.35	2.35	2.37	2.44	2.57		
(12)平 均		2.19	2.23	2.33	2.27	2.22	2.33	2.33	2.36	2.38	2.38	2.44	2.60	+ 0.19	+ 0.27
(19)麦稻中肥Ⅰ		2.27	2.18	2.35	2.25	2.22	2.33	2.33	2.36	2.42	2.39	2.45	2.55		
(20)麦稻中肥Ⅱ		2.17	2.21	2.24	2.15	2.21	2.34	2.28	2.31	2.37	2.39	2.44	2.58		
(12)平 均		2.22	2.20	2.30	2.20	2.22	2.33	2.30	2.34	2.39	2.39	2.45	2.57	+ 0.17	+ 0.27

Remark: Green manure is generally cut and used as feed, leaving only the stubble.

Key:

- | | |
|---|---|
| 1. Year | 12. Average |
| 2. Forecrop | 13. Crop rotation-rice-rice I |
| 3. Treatment | 14. Crop rotation-rice-rice II |
| 4. Vetch | 15. Rape-rice-rice I |
| 5. Early rice | 16. Rape-rice-rice II |
| 6. Late rice | 17. Wheat-rice-rice highly ferti-
lized I |
| 7. Winter crop | 18. Wheat-rice-rice highly ferti-
lized II |
| 8. Comparison of winter crops
of 1977 and 1974 | 19. Wheat-rice-rice intermediately
fertilized I |
| 9. Comparison of late rice
of 1977 and 1974 | 20. Wheat-rice-rice intermediately
fertilized II |
| 10. Fertilizer-rice-rice I | |
| 11. Fertilizer-rice-rice II | |

The rate of accumulation of organic matter in the soil is different under the five different arrangements. The fastest rates of accumulation occurred in the rape-rice-rice crops and during the rotational crop-rice-rice crops. Comparisons between 1977 and 1974 show respective increases of 0.42 to 0.46 percent and 0.32 to 0.37 percent. The second fastest rate of accumulation occurred in the wheat-rice-rice highly fertilized and wheat-rice-rice intermediately fertilized crops. The slowest rate of accumulation occurred in the fertilizer-rice-rice crops.

2. Effect of Double Crop Rice in the Triple Crop System Upon the Soil's Nitrogen

Experimental results (Table 2) showed that the changes in the overall content of nitrogen in the soil among the five different arrangements were not great. The range of change of the content of whole nitrogen in the soil during the early rice crop (comparing 1977 to 1974, same as follows) was between 0 - +0.004 percent and the range of change of the content of whole nitrogen in the soil during the late rice crop was -0.003 to +0.005 percent.

Under the level of fertilization of the experiment, the effect of different double croppings of rice under the triple crop system on the soil's nitrogenous fertility is mainly manifested as a result of planting of different winter crops. According to experimental results, the winter crop which left the soil with the highest content of whole nitrogen was rape with a 3-year average of 0.141 percent. The second highest was wheat (wheat-rice-rice highly fertilized) and the winter rotational crop in the rotational crop-rice-rice arrangement. The contents of whole nitrogen left by these two crops in the soil were both above 0.137 percent. The lowest content was left by the green manure crop. The whole nitrogen content in the soil was only 0.132 percent, lower than that left by rape by 0.009 percent.

The rise in the nitrogenous fertility of the soil left by the rape crop was mainly due to the fact that this type of crop was fertilized more during its growth period. At the same time, the actual amount of nitrogen absorbed by the crop from the soil was less. Thus under the same level of fertilization, the rape crop was more fertile than the other winter crops. According to the calculations from samples taken at a fixed point, a rapeseed crop of 300 jin yield per mu produces about 200 jin of leaves, and adding this to the amount of flowers and pods that have fallen on the ground, they total about 4.5 jin of pure nitrogen. This indicates that about 4.5 jin of nitrogen absorbed and utilized by rape are returned to the soil. This serves banking of fertilizers in the soil well.

Table 2. Changes in the Content of Whole Nitrogen in the Soil of Double Crop Rice in the Triple Crop System (%)

		(7) (8)												(9)		
(3)	(2)	1974			1975			1976			1977			1977年 早稻与 1974年 早稻比		
		(4)	(5)	(6)	(4)	(5)	(6)	(4)	(5)	(6)	(4)	(5)	(6)	(4)	(5)	(6)
(10)	肥前稻 I	0.137	0.125	0.130	0.131	0.136	0.130	0.137	0.129	0.135	0.135	0.131				
(11)	肥前稻 II	0.134	0.133	0.130	0.140	0.131	0.131	0.132	0.133	0.136	0.136	0.134				
(12)	平 均	0.136	0.129	0.130	0.136	0.134	0.131	0.135	0.131	0.136	0.136	0.133	-0.000	-0.004	0.132	0.136
(13)	轮前稻 I	0.138	0.132	0.127	0.148	0.137	0.146	0.134	0.133	0.138	0.135	0.125				
(14)	轮前稻 II	0.136	0.130	0.129	0.144	0.137	0.140	0.131	0.132	0.139	0.141	0.124				
(12)	平 均	0.137	0.131	0.128	0.146	0.137	0.143	0.133	0.133	0.139	0.138	0.125	-0.001	-0.003	0.137	0.138
(15)	抽前稻 I	0.138	0.128	0.134	0.132	0.137	0.144	0.137	0.137	0.146	0.145	0.134				
(16)	抽前稻 II	0.143	0.126	0.141	0.137	0.133	0.146	0.135	0.132	0.136	0.139	0.129				
(12)	平 均	0.141	0.127	0.138	0.135	0.135	0.145	0.136	0.135	0.141	0.142	0.132	-0.001	-0.005	0.141	0.139
(17)	麦前稻高肥 I	0.129	0.130	0.129	0.136	0.136	0.145	0.133	0.133	0.141	0.137	0.131				
(18)	麦前稻高肥 II	0.137	0.129	0.129	0.143	0.132	0.143	0.131	0.134	0.136	0.136	0.128				
(12)	平 均	0.133	0.130	0.129	0.140	0.134	0.144	0.132	0.134	0.139	0.137	0.130	-0.004	-0.001	0.137	0.136
(19)	麦前稻中肥 I	0.131	0.125	0.124	0.131	0.136	0.139	0.133	0.135	0.140	0.134	0.126				
(20)	麦前稻中肥 II	0.130	0.125	0.123	0.133	0.136	0.139	0.130	0.129	0.136	0.135	0.129				
(12)	平 均	0.131	0.125	0.124	0.132	0.136	0.139	0.132	0.132	0.138	0.135	0.128	-0.004	-0.003	0.134	0.133

* The column listing 4-year averages for the winter crop is actually the average for a 3-year period because the content of whole nitrogen in the soil was not measured for the year 1974.

Key:

- | | |
|-----------------------------|------------------------------------|
| 1. Year | 12. Average |
| 2. Forecrop | 13. Rotational crop-rice-rice I |
| 3. Treatment | 14. Rotational crop-rice-rice II |
| 4. Winter | 15. Rape-rice-rice I |
| 5. Early rice | 16. Rape-rice-rice II |
| 6. Late rice | 17. Wheat-rice-rice highly ferti- |
| 7. Comparison of early rice | lized I |
| crops of 1977 and 1974 | 18. Wheat-rice-rice highly ferti- |
| 8. Comparison of late rice | lized II |
| crops of 1977 and 1974 | 19. Wheat-rice-rice intermediately |
| 9. Four-year average | fertilized I |
| 10. Fertilizer-rice-rice I | 20. Wheat-rice-rice intermediately |
| 11. Fertilizer-rice-rice II | fertilized II |

In this experiment, the whole nitrogen content in the soil of the green manure crop was the lowest. According to our analysis, the causes were: first, because the green manure crop was not fertilized and second, because the portion of the green manure crop above ground was cut and used as feed leaving only a small amount of remnant stubble (the amount of remnant stubble left in the fields was estimated to be 700 to 900 jin

per mu). Thus, the effect of banking fertilizers in the soil in this particular arrangement was not obvious. But we believe that by planting green manure crops, feed was increased, fertilizers in the soil was adjusted, and the effect of raising the entire agricultural production unit's level of nitrogen circulation was still great.

It can be seen from Table 2 that the 3-year average of the content of whole nitrogen in the soil of the winter crop (except fertilizer-rice-rice) was between 0.134 and 0.141 percent. The content of whole nitrogen in the soil dropped slightly after planting double crop rice. The 4-year average was between 0.130 and 0.132 percent. Analysis of the absorption and expenditure of nitrogen of double crop rice in the five different arrangements (Table 3) showed that the single crop of early rice took from the soil between 16.5 jin and 20.7 jin of pure nitrogen and the amount of pure nitrogen applied as fertilizer was between 17.5 jin and 20 jin. The single crop of late rice took from the soil 12.8 jin and 14.2 jin of pure nitrogen and the amount of pure nitrogen applied as fertilizer was 14 jin and 16 jin. It can be seen that the drop in the content of whole nitrogen in the soil after planting double crop rice is not the result of more nitrogen being absorbed and taken away by the crops than that applied as fertilizers. It may be the result of the fact that the double crop rice field had a strong reduction and contained a rich amount of organic matter thus stimulating denitrification and causing the loss of nitrogen.

Table 3. Comparison of Absorption and Expenditure of Nitrogen of Double Crop Rice

(2) 项目		(3) 处理	(4) 肥 田 肥	(5) 轮 稻 肥	(6) 油 稻 肥	安 田 肥 (7) (高肥)	安 田 肥 (8) (中肥)
(1) 早 稻	产量 (斤/亩) (10)		77.7	748.0	785.7	740.9	702.1
	收获取走氮 (斤/亩) (11)		17.8	18.9	20.7	18.0	16.5
	引入氮 (斤/亩) (12)		20.0	17.5	17.5	17.5	17.5
	引入占取走% (13)		112.4	92.8	84.0	96.3	106.3
(14) 晚 稻	产量 (斤/亩) (10)		507.0	467.5	495.2	466.6	462.7
	收获取走氮 (斤/亩) (11)		13.9	13.2	14.2	13.5	12.8
	引入氮 (斤/亩) (12)		16.6	16.6	16.6	16.6	14.0
	引入占取走% (13)		119.4	125.7	116.8	122.9	109.3
(15) 共 计	产量 (斤/亩) (10)		1,284.7	1,215.5	1,280.9	1,207.5	1,164.8
	收获取走氮 (斤/亩) (11)		31.7	32.1	34.9	31.5	29.3
	引入氮 (斤/亩) (12)		36.6	34.1	34.1	34.1	31.5
	引入占取走% (13)		115.4	106.2	97.7	108.2	107.4

Key:

- | | |
|--------------|------------------------------|
| 1. Crop | 4. Fertilizer-rice-rice |
| 2. Item | 5. Rotational crop-rice-rice |
| 3. Treatment | 6. Rape-rice-rice |

7. Wheat-rice-rice (highly fertilized)
8. Wheat-rice-rice (intermediately fertilized)
9. Early rice
10. Yield (jin/mu)
11. Nitrogen taken by harvest (jin/mu)
12. Nitrogen applied as fertilizer (jin/mu)
13. Applied as % of removed
14. Late rice
15. Total

Summarizing the above, we see that to ceaselessly raise the fertility of the soil of double crop rice in the triple crop system, to realize high and stable yields, the sources of fertilizers must be broadened and more fertilizers must be applied and the apportionment of areas of winter crops of wheat, rape and green manure must be properly arranged, agriculture and animal husbandry must be combined, using and nurturing of the fertility of the soil must be allied properly and rotational crops must be arranged reasonably. In fertilizing the paddy rice field, nitrogen and chemical fertilizers must be deeply applied to reduce or avoid denitrification and loss of nitrogen.

3. The Effect of Double Crop Rice in the Triple Crop System Upon the Soil's Structure

It can be seen from Table 4 that changes in porosity and volume-weight of untilled soil after harvesting of late rice in the three different arrangements were not great. After tilling, some differences emerged from among the various arrangements but these differences were due to particular conditions. For example, under conditions where autumn rainfall was scarce, the water content of the soil was low, the quality of tilling was better, the soil structure of the wheat and rape crops improved over that of the green manure crop. In November 1977, the volume-weight of the soil at a depth of between 3 cm and 8 cm after tilling for the late rice crop in the rape-rice-rice and wheat-rice-rice arrangements was between 1.10 grams/millimeter³ and 1.11 grams/millimeter³, visibly lower than the volume-weight of the untilled soil of the green manure crop of 1.14 grams/millimeter³, and porosity also increased, but where autumn rainfall was plentiful, the soil of the late rice crop was moist and the quality of tilling was poor, the structure of the soil of the wheat crop and rape crop worsened. The volume-weight of the soil of the rape crop at a depth of 10 cm to 15 cm increased from the 1.30 grams/millimeter³ of the soil of the green manure crop to between 1.35 grams/millimeter³ and 1.40 grams/millimeter³, and the porosity dropped from 50.1 to 47.5 percent.

Table 4. Effect of Double Crop Rice in a Triple Crop System Upon the Soil's Structure

(1) 测定时间	(2) 测定深度 (cm)	(3) 肥 田 土		(4) 油 田 土		(5) 麦 田 土 高 肥	
		(6) 重 (克/厘米 ³)	(7) 孔隙度 (%)	(6) 重 (克/厘米 ³)	(7) 孔隙度 (%)	(6) 重 (克/厘米 ³)	(7) 孔隙度 (%)
(8) 1976年10月 (未耕作)	3—8	1.20	54.6	1.19	54.9	1.19	55.1
	10—15	1.31	50.6	1.31	50.6	1.32	50.4
(9) 1976年12月 (耕作、播种后)	3—8	1.20	54.6	1.18	55.5	1.18	55.2
	10—15	1.30	50.1	1.35	49.5	1.40	47.5
(10) 1977年10月 (未耕作)	3—8	1.14	56.7	1.16	55.4	1.17	55.3
	10—15	1.23	52.7	1.27	51.2	1.27	51.3
(11) 1977年11月 (耕作、播种后)	3—8	—	—	1.10	57.6	1.11	57.5
	10—15	—	—	1.19	54.9	1.19	55.5

Method of tilling after the early rice crop: Fertilizer-rice-rice fields were plowed and raked by cow. Other rotation crop fields were tilled by machine and raked by cow.

Key:

- | | |
|---|--|
| 1. Time of measurement | 7. Porosity (%) |
| 2. Depth of measurement (cm) | 8. October 1976 (untilled) |
| 3. Fertilizer-rice-rice | 9. December 1976 (tilled, after sowing) |
| 4. Rape-rice-rice | 10. October 1977 (untilled) |
| 5. Wheat-rice-rice highly fertilized | 11. November 1977 (tilled, after sowing) |
| 6. Volume-weight (grams/millimeter ³) | |

Deterioration of the structure of the soil was especially visible when comparing the field of the late rice crop of double crop rice in the triple crop system with the winter field after tilling the field of intermediate rice, sweet potato or cotton in the same year. Soil of the winter field of intermediate rice, cotton or sweet potato at a depth of 3 cm to 8 cm had a volume-weight of 0.99-1.12 gram/millimeter³, a porosity of 63.1 to 57.0 percent, and at a depth of 10 cm to 15 cm, the volume-weight was 1.12-1.25 gram/millimeter³ and porosity was 52.7 to 57.9 percent, a drop of 0.06-0.19 gram/millimeter³ in the volume-weight of the soil at a depth of 3 cm to 8 cm after tilling the field of double crop rice in the same year and a drop of 0.12-0.25 gram/millimeter³ in the volume-weight of the soil at a depth of 10 cm to 15 cm.

The main reasons for the deterioration of the physical structure of the soil after tilling the field of late rice of double crop rice in the triple crop system were: (1) late rice was harvested late when there

was plenty of autumn rain (according to the records of the Deyang County weather station, the chance of autumn rainfall for a year is 58 percent). Evaporation was slow. The time for drying the field was short. The soil's degree of moistness was great. Tilling was difficult and the quality was poor. It can be seen from Table 5 that the water content of the soil at the time of tilling of intermediate rice, sweet potato and cotton crops was between 22.0 and 26.3 percent, tilling quality was good and clods with a diameter greater than 3 cm constituted only 18.2 to 40.1 percent of the soil. The water content of the double crop late rice field reached between 28.9 and 38.9 percent, and clods with diameter greater than 3 cm constituted 73.7 percent of the soil. (2) The time of soaking of double crop rice in water was long. The field was plowed and raked many times. The soil was highly scattered. It can be seen from Table 5 that the content of water in the soil of the fields of late rice which follows continuous corn crops and which is basically harvested at the same time as the late rice of a double crop is lower than that of the double crop late rice field, and the quality of tilling is better than that of the double crop late rice field.

Table 5. Comparison of the Percentages of Clodding of Different Grades in the Soil of Different Forecrops After Tilling

(1976年)

(1) 前 作	(2) 田块数	取土深度 (3) (cm)	土壤水份 (4) (%)	(5) 各 级 坷 垃 率 (%)						
				> 8 cm	> 4 cm	> 3 cm	> 2 cm	> 1 cm	> 0.5 cm	> 0.5 cm
(6) 双季晚稻	6	0-10	28.9-38.9	27.1	34.4	12.2	10.4	8.9	8.2	0.8
(7) 玉米连作晚稻	4	0-10	27.1-37.3	11.6	25.2	10.9	15.1	16.5	12.4	8.4
(8) 中 稻	6	0-10	22.1-26.3	1.7	25.3	13.1	15.7	19.2	11.8	13.3
(9) 甘 薯	2	0-10	23.7-25.6	/	11.0	7.2	11.2	22.9	18.1	29.6
(10) 棉 花	2	0-10	22.0-23.8	/	10.9	8.5	9.4	21.6	19.6	30.0

Key:

- | | |
|--|--|
| 1. Forecrop | 6. Double crop late rice |
| 2. Number of fields | 7. Late rice following continuous corn crops |
| 3. Depth of soil samples (cm) | 8. Intermediate rice |
| 4. Water content in soil (%) | 9. Sweet potato |
| 5. Percentages of clodding at different grades (%) | 10. Cotton |

Therefore, to retain and improve soil structure, drainage in the fields must be done well to reduce the water content in the soil of the fields of double crop late rice, to use a certain ratio of early xian rice in combination as late rice, make late rice mature earlier, and drain away the water in the fields earlier, and at the same time, such rotations as two paddy rice crops followed by one dryland crop and one dryland crop followed by one paddy rice crop can be planted to reduce the water content of the soil and raise the quality of tilling.

4. The Relationship Between Soil Fertility and the Yield of Double Crop Rice in the Triple Crop System

As mentioned above, the differences in soil fertility at the winter crop opening necessarily affect the yield of the aftercrop of double crop rice. Three years of experimental results show that the growth of early rice following rape or green manure crops is prosperous. There are plenty of tillers and the highest number of tillers on the stems can reach 623,000 and 666,000 respectively. The second highest number of tillers on the stems or 576,000 can be reached by rice crops following wheat in a highly fertilized field and the least number of tillers on the stems or 533,000 can be produced by rice crops following wheat in fields that are intermediately fertilized. The same trends occur in the number of panicles formed and manifestations of panicle characteristics. Thus, the yield of early rice of the rape-rice-rice and fertilizer-rice-rice arrangements is the highest with per mu yield of 785.7 jin and 777.7 jin respectively, an increase of 11.1 to 12.2 percent in yield over the yield of rice crops following wheat in fields intermediately fertilized.

The effect of winter crop openings upon the yield of late rice is not as obvious as their effect upon early rice. This is because the yield of late rice is not only affected by fertility of the soil but also by low temperatures in autumn. The key that determines the amount of yield of late rice is whether the heading and flowering periods of late rice encounter low temperatures. Experimental results show that yields of late rice of the fertilizer-rice-rice and rape-rice-rice arrangements are higher (per mu yields of late rice are 507.0 jin and 495.2 jin respectively, an increase of 9.5 and 7.0 percent respectively over that of late rice of the wheat-rice-rice intermediately fertilized arrangement), while the yields of late rice of the other arrangements are basically the same.

The fertilizer-rice-rice arrangements still produce the highest total yield of double crops of early and late rice. Yields per mu are 1,284.7 jin and 1,280.9 jin respectively, an increase of 9.9 to 10.3 percent over the total yield of the wheat-rice-rice intermediately fertilized arrangement. The second highest total is produced by the rotational crop-rice-rice arrangement. Double crop rice produces a per mu yield of 1,223.8 jin, an increase of 5.5 percent over the total yield produced by the wheat-rice-rice intermediately fertilized arrangement. Yields of double crop rice of the wheat-rice-rice highly fertilized and wheat-rice-rice intermediately fertilized arrangements tend to be low.

Conclusion

The fertility of the soil at the winter crop opening of double crop rice in the triple crop system has a definite effect upon the yield of double crop rice. When the soil is fertile at the crop opening, the yield will

be high. Because less fertilizers are applied during the green manure crop, and because the portion above ground is cut for feed, leaving only the lower remnant stubbles, the whole nitrogen content of the soil is lower than that of other crop openings. In this arrangement, the effect of retaining the soil's fertility is small, but planting of the green manure crop adjusts the soil's fertilizers, increases feed, more hogs can be raised, more manure can be produced, and it can serve a great function in raising the level of nitrogen circulation in the entire agricultural production unit. The yield of double crop rice in the fertilizer-rice-rice arrangement is the highest among all arrangements and the yield is high and stable. This is because the green manure crop opening is early and early and late rice crops can both be transplanted early, the season for growth is lengthened, and the effects of low temperature during the middle 10 days of September can be avoided when late rice flowers. In developing double crop rice under present conditions, the green manure crop opening must still be assured to a definite extent.

The amount of yield of winter crops such as rape and wheat following double crop rice is mainly determined by the quality of the soil's structure and the quality of sowing when measures of cultivation are basically the same. Experiments show that the yield is high in places where autumn rainfall is scarce and the quality of tilling is good. For example, in 1975, the per mu yields of wheat of the wheat-rice-rice highly fertilized and wheat-rice-rice intermediately fertilized arrangements were 821.0 jin and 626.2 jin respectively. The yield of rape was 316 jin. Conversely, when there is plenty of autumn rainfall and the quality of tilling is poor, the structure of the soil is poor, the yield will drop. For example, in 1977, the per mu yields of wheat of the wheat-rice-rice highly fertilized and wheat-rice-rice intermediately fertilized arrangements were 457.8 jin and 385.7 jin respectively, a drop in yield from 1975 by 83.1 and 65.7 percent respectively. Per mu yield of rape amounted to 291.0 jin, a drop of 8.4 percent from 1975. Thus, poor soil structure can be regarded as an important reason for the drop in yield and repulsion of fertilizers by the aftercrop of double crop rice. At the same time it can be observed that the quality of the structure of the soil affects the yield of wheat more than rape. The change in yield of wheat between 2 years is 34.3 to 35.5 percent while the change in yield of rape is 13.3 percent and the change in yield of astragalus sinicus is 17.6 percent. Because different crops have different adaptabilities to external conditions, the aftercrop of late rice crop should first be rape, then green manure with appropriately chosen fields for wheat. This arrangement will be beneficial to increasing the yield of winter crops.

Because there is plenty of autumn rainfall in this area and the soil is rather wet after harvesting of double crop rice, we have, in recent years, transplanted rape in holes dug in hardpan fields followed by deep intertilling to avoid tilling in overly wet soil which will destroy the

soil's structure. This has produced good results in increasing the yield of rape. At present, the entire brigade has planted over 500 mu of rape in hardpan fields, constituting between 70 and 95 percent of the total area of rape fields, and the average per mu yield has reached over 300 jin. The major reasons for the high yield of rape transplanted in holes dug in hardpan fields are preliminarily believed to be because:

1. The planting season is right so that transplanting of rape in late rice fields is not late. The method of transplanting rape in holes dug in hardpan fields enables rape to be transplanted as soon as the late rice is harvested and when the field is not soaked in water. The transplanting time is generally about half a month earlier than the time of transplanting rape in late rice fields after tilling. The advantageous heat and light conditions of the period before winter are better utilized. The plants are able to form a better vegetative body before the frost and freezing. This enables the winter seedlings to grow healthily. Experiments show rape transplanted half a month earlier in hardpan fields yields 10 to 30 percent more than rape transplanted late in plowed fields.

2. Wind does not blow through the roots of rape in hardpan fields and there are few empty holes. Large pieces of soil are not present around the holes dug in hardpan fields. The period for the plants to return green only takes 3 to 5 days. Empty holes are few and growth is uniform. Fields that have been plowed and tilled have large clods and many cracks in the soil. The roots and the soil do not cling together well and empty holes are easily formed.

3. Deep intertilling timely will prevent the rape plants from stiffening in hardpan fields. After the rape plants are alive and when the soil does not cling onto the hoe, the rows in between should be deep intertilled to about 3 cm in time to facilitate drainage, aeration and drying the soil. After intertilling the soil, a sidedressing should be applied. This helps the growth and development of the rape plants.

4. A definite ability to conserve moisture is retained. Measurements taken from December to March of the next year show that the water content of the soil of hardpan fields planted with rape at a depth of 0 cm to 5 cm was higher than the water content of the soil of plowed and intertilled fields transplanted with rape by between 5 and 10 percent, and at a depth of 5 cm to 15 cm, the content of water of the soil of hardpan fields planted with rape was higher by 1 to 2 percent. In this area's winter and spring when the conditions are dry, a high water content in the soil is advantageous to the growth of rape.

EXPERT OUTLINES CITRUS PRODUCTION PLAN

Beijing GUANGMING RIBAO in Chinese 16 Nov 79 p 2

[Unsigned article: "Quicker Development of Citrus Production Urged: Noted Citrus Expert Zhang Wencai [4545 2429 2088] Advocates Suiting Methods to Local Conditions in Establishing Bases"]

[Text] Professor Zhang Wencai, noted citrus expert from the Central China College of Agriculture, made the following suggestions to the concerned units: China ought to make full use of its superior natural conditions, suit measures to local conditions, and carry out suitable centralization in building a citrus products production base and accelerating our production of citrus products. This is an important step in market diversification, in generating foreign exchange and in accumulating capital for construction of socialist modernization.

Professor Zhang Wencai said that over the past 20 years Spain and America quickly developed citrus production and respectively have under cultivation areas of 2.7 million mu and 8.2 million mu. In 1977 Spain's citrus production reached 2.85 million dun, a production value of \$8 billion. In 1978 American citrus production was 14.21 billion dun, a production value of \$42 billion. These two countries have the following citrus production features: both suit measures to local conditions, take suitable advantage of natural conditions, plant rows hundreds of miles long and centralize production in large areas. In these two countries citrus products have already become an important part of the economic structure and are major export items.

Professor Zhang Wencai said that China is the original production center of the world's citrus products, has a long history of citrus cultivation and has an extreme abundance of citrus products, with 14 provinces (regions) capable of developing citrus production. However, because of neglect of citrus production during years past and because of the destruction of the extreme left line of Lin Biao and the "gang of four" our citrus

production has fallen behind that of other countries. After smashing the "gang of four," the concerned departments in a few provinces (regions) decided to establish citrus production bases, which is a good beginning.

How then are we to build China's citrus products production base? Professor Zhang Wencai offers the following suggestions:

1. We ought to utilize our superior natural conditions by thoroughly developing a huge area as a citrus products production base. The Changjiang stretches for 650 kilometers from Yidu [1355 6757] in Hubei to Chongqing [6850 1987] in Sichuan and the area on both banks which can be planted with citrus trees is larger than Spain. Furthermore, the Changjiang then flows on to Jiading [0857 1353] and the Jialing [0857 7117] River flows to Nanchong [0589 0339]. A centralized citrus production area along the mountainous banks of these rivers would be larger than the present citrus production area in America. This region has a warm climate and convenient transportation and does not have such problems as huanglong [7806 7893] disease, bacterial wilt, and kuiyang [3391 4046] disease. The riverbanks here should not be opened to cultivation but rather should be kept green with citrus trees which would prevent soil erosion and consequent siltation of of the Changjiang.

2. We should strive to raise the quantity and quality of our citrus products. On the average, American and Japanese citrus orchards produce over 3,000 jin per mu while ours produce an average of less than 400 jin per mu. American, Japanese and Spanish citrus products are of pure variety and standardized quality while ours are of mixed variety and uneven quality. There are too few jinchen [6930 2892], navel oranges, taochen [2711 2892] and Wenzhou tangerines of superior quality. Our yearly production hovers around 500,000 dun which is insufficient to satisfy a year-round international market. We ought to distribute adequate funds, fertilizer and pesticide and improve our technology in cultivation, varieties, packaging, storage and shipping in order to raise the quantity and quality of our citrus products.

3. We should carry out citrus product commercialization through close coordination of production, manufacturing, storage, transportation and sales. In order to strengthen the technology of the overall production process, raise quantity and quality, prevent spoilage and protect freshness and extend the supply periods it is mandatory to closely coordinate production, manufacture, storage, transportation and sales, grow improved varieties in specific areas, commercialize the products, standardize quality and satisfy both national and foreign markets. The development in socialist large-scale agriculture

of a centralized citrus production base over a large area depends upon on the spot production services which can be provided by the Ministry of Agriculture, the General Supply and Marketing Cooperative, The Ministry of Agriculture Technology Extension Stations, the packing plants, the storage facilities, and the processing plants as well as the fertilizer and pesticide machinery supply stations. He advocates that the agriculture, foreign trade and supply and marketing departments organize coordinated organizational structures to support production. Citrus products of the highest quality should be used to supply foreign trade and secondary quality products should supply the national market and the processing operations. This will forestall competition over product sources which results in waste of human and material resources.

4. We must resolve the contradiction between foodgrains and citrus products. At present the country's citrus production regions are in general competition with foodgrains production over land, fertilizer, capital and labor. Because some provinces (regions) require that brigades in citrus regions produce a foodgrain supply in excess of demand they consequently are concerned only with foodgrains and neglect citrus products production. He advocates that in the citrus producing regions the government allocate foodgrains to the province, county or commune based on the amount of citrus products contributed. In this fashion we can thoroughly implement the simultaneous and complete development of agriculture, forestry, animal husbandry, side-line occupations and fishery, suit measures to local conditions and fulfill the policy of centralization.

5. In the centralized citrus production regions the government should establish citrus research centers to serve production needs. (1) There is a centralized production region for jinchuan [6930 2892], navel oranges, xiachen [1115 2892] and tangerines from Yidu to Chongqing and Jiangnan [3068 1344]. This region has great production potential. A citrus research center can be established at the Chongqing Beipei [0554 8951] Citrus Institute and branches can be established at Yichang [1355 2490] and Jiangnan. These institutes can perform research on this area's production, packaging, storage and processing problems. (2) A centralized production area with great potential for jiaogan [5604 2674], liuchen [2692 2892], xihuichen [2450 2585 2892] and xiachen lies in the area from Chaoshan [3390 3073] in Guangdong to Liuzhou [2692 1558] in Guangxi. A citrus research center can be established in the Guangdong Boloyang [0590 5012 2799] village citrus orchard and branches can be established in Puning [2528 1380] and Liuzhou. They can research this area's problems in production, packaging, storage and processing.

(3) The area from Huangyan [7806 1484] in Zhejiang to Zhangzhou [3361 1558] in Fujian. This is a centralized production area of Wenzhou tangerines, bendizao [2609 0966 2483], fujie [4395 4814], lulan [5684 2674] and jiaogan [5604 2674]. A citrus research center can be established at the Huangyan Citrus Institute in Zhejiang.

Professor Zhang Wencai advocates that to hasten the development of citrus production the Ministry of Agriculture ought to organize the citrus technology personnel from the above mentioned three areas' agricultural research and education institutes to perform research on the scientific technology of improving citrus varieties, seed selection, quarantine and prevention of pests and diseases, orchard management, packaging, storage, processing and shipping in order to provide support for the citrus products production base.

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BRIEFS

EDIBLE OIL PURCHASES INCREASED--Beijing, January 15 (XINHUA)--China last year purchased 1.3 million tons of edible vegetable oils, 265,000 tons more than in 1978, according to cereals and oils department. China's total output of oilseeds in 1979 increased by 750,000 tons over 1978. Many production teams and commune members still have surplus vegetable oils and oilseeds after meeting state purchasing quotas. State commercial departments now purchase edible vegetable oils above the state plan at a price 50 percent higher than the basic purchase price. [Text] [OW150752 Beijing XINHUA in English 0730 GMT 15 Jan 80 OW]

VEGETABLE RESEARCH RESULTS--Beijing, January 3--Chinese scientists have developed more than 100 fine strains of over ten types of vegetables by selection or hybridization or by radiation to induce mutation. A variety of hybrid Chinese cabbage obtained by the Shenyang Agricultural Research Institute is early ripening and has a growth period of 50 to 55 days. It is harvested in August and September when local vegetable supply fall short of demand and it does not interfere with the sowing of winter vegetables. The Beijing Institute of Vegetable Crops has developed a hybrid high-yield tomato strain that bears big fruit. The strain is already being used. The agricultural college in remote Qinghai Province developed a new turnip variety by radiation. The variety has been cultivated on a trial basis in some provinces. A high-yield cabbage developed by the Agricultural Research Institute in the Xigaze Prefecture in the Tibet Autonomous Region is now widely grown in 18 counties in the prefecture as well as in some areas of Sichuan and Xinjiang. Vegetable gardeners in China also grow vegetables in beds covered with plastic sheets to raise output. There are now 5,300 hectares of such beds throughout China. [OW031201 Beijing XINHUA in English 0722 GMT 3 Jan 80 OW]

SEED SELECTION EXPERIMENTS--Beijing, Jan 16--At the third forum of the China seed service held in Beijing recently, the achievements of 12 counties in experimenting with seed production were reviewed and the tasks set out for this year. The China seed service chose 12 counties in 1978 to carry out experiments in modern seed production. Located in different parts of the country, these counties grew different varieties of crops and had better conditions for seed cultivation and a high technical level. Guided by the China seed service, the counties built storehouses with floor space totalling 65,000 square meters and seed processing workshops covering a total of 13,000 square meters. They established seed farms with a total of

15,100 hectares of farmland. The 12 counties provided a total of 35,500,000 kilograms of fine seed for their own needs last year, which was 50 percent of the total seed used in these counties. A general increase in yield was obtained after use of the fine varieties. The number of counties involved in experiments had increased to 94 by the end of last year. All experimental work is carried out with the financial help of the China seed service. [Text] [OW161427 Beijing XINHUA in English 0250 GMT 16 Jan 80 OW]

AGRICULTURAL AIRPLANE DEMONSTRATED--The Model-11 Transport agricultural airplane, which is manufactured by Plant 122 of the Third Ministry of Machine Building, was put through work demonstrations this month in the mountainous areas of the suburban communes Zhuliao [4554 2436], Jiufu [0046 0514], Zhonglotan [6988 5507 3389], and Taiho [1132 0735] and in the Baiyun [4101 0061] Mountain area. The plane carried out a demonstration of pesticide spraying to eliminate diseases and pests harmful to forests. The plane made 16 flights in four days, spraying a total of 60,000 square mu. The spray eliminated over 80 percent of the forest pests. The Model-11 Transport agricultural airplane is Chinese planned and manufactured and all of the materials and equipment are produced in China. The successful planning and manufacture of this agricultural airplane fills a gap in this area of our aircraft industry. In 1975, Plant 122 of the Third Machine Ministry shouldered the burden of designing and manufacturing this aircraft and produced the first plane that same year. After undergoing a number of improvements the design was basically settled upon in 1977. Its external appearance is pleasing and it is compact and convenient. In comparison with the agricultural airplanes we are now using this plane has several special features: 1. Its airborne maneuverability is good and it has a high rate of climb at 3.5 meters per second; the field of vision is good; its proven work performance is of high quality. 2. It requires little in way of an airfield and can take off from and land on a grass field or land slightly compressed by a tractor. 3. The aircraft has simple equipment, is dependable and has little air resistance. The Model-11 Transport agricultural airplane was shown at the trade fair this spring and was favorably commented upon by foreign guests. It will be shown again at the trade fair this fall. [Text] [Guangzhou NANFANG RIBAO in Chinese 12 Oct 79 p 1] 11582

1979 COTTON PROCUREMENT--According to a CAIMAO ZHANXIAN BAO report, China has overfulfilled the 1979 cotton collection and purchase plan. Statistics released by the National Supplying and Marketing General Cooperative show that as of 11 January 1980, 40.42 million dan [piculs] of cotton have been collected and purchased. The 1979 procurement is 1 percent above planned target. [Beijing Domestic Service in Mandarin 2230 GMT 14 Jan 80 OW]

CAMEL BREEDING CONFERENCE--Hohhot, 11 Jan--A national conference to coordinate efforts in camel breeding was recently held in Alxa Zuoqi, the camel-producing center in Nei Monggol. It was attended by the personnel concerned from Xinjiang, Qinghai, Gansu, Ningxia and Nei Monggol. The conference decided on the direction and plan for the development of the country's camel-breeding industry. It called for breeding two-humped camels mainly for meat while also giving consideration to their use as draft animals and production of milk. China now has 600,000 camels, second largest in the world, and produces 4 million jin of camel wool a year, of which 600 dun are exported. The country has a total of 1.1 million square kilometers of wilderness land suitable for raising camels. On the basis of 400 mu of land per camel, this means China has the land potential of raising more than 4 million camels. [Beijing XINHUA Domestic Service in Chinese 0202 GMT 11 Jan 80 OW]

WILD RICE COLLECTION CONFERENCE--The Hainan Administrative District Bureau of Agriculture and the Autonomous Prefecture Bureau of Agriculture recently held separate Wild Rice Collection Conferences to investigate wild rice collection resources. The Wild Rice Study Group, led by Chen Weiqin [7115 3555 2953] head of the Wild Rice Institute of the provincial Academy of Agricultural Sciences, also attended the conference and moreover will travel throughout the island to carry out studies. Wild rice is the ancestor of cultivated rice, has high levels of resistance to disease and pests, is suitable for planting in many environments, and is a valuable resource for breeding paddy rice. Hainan island is situated in the tropics, has a warm climate, abundant rainfall and has a complex topography. It is a relatively important area for wild rice and so far three types, common wild rice, medicinal wild rice and youli [3994 1429 4721] wild rice, have already been discovered. [Text] [Guangzhou NANFANG RIBAO in Chinese 17 Dec 79 p 1] 11582

TROPICAL PLANTS SYMPOSIUM--Kunming, 5 Jan--The China Tropical Plants Society recently held a national symposium in Xishuangbanna Dai Autonomous Prefecture, Yunnan, to discuss ways to further develop China's rubber tree and other tropical plants resources to meet the needs of the four modernizations. Cadres and scholars of the Chinese Academy of Sciences, academies of agricultural and forestry sciences, and other research units reviewed both positive and negative experiences in growing rubber trees over the past 20 years. At present, China ranks fourth in terms of total area of rubber plantations and sixth in annual rubber output. There are vast areas in Hainan Island and Xishuangbanna for growing rubber trees. The symposium's participants also called for taking measures to maintain ecological balance while developing rubber plantations in these areas. [OW071920 Beijing XINHUA Domestic Service in Chinese 0208 GMT 5 Jan 80 OW]

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BRIEFS

ANHUI OIL-BEARING CROPS--This year Anhui achieved a big bumper harvest from its oil-bearing crops. Total output was 8.154 million dan, an increase of 25 percent over that in 1978 which had been the highest producing year. This year the output of oil-bearing crops generally increased everywhere in the province and each type of crop had an all-round bumper harvest. The increase in output in Fuyang and Suxian prefectures and Huainan and Bangbu municipalities was over 60 percent. Among the oil-bearing crops, peanuts had the largest increase in output. Its total output was 2,481,300 dan, a 48 percent increase over that in 1978. The next largest was rapeseed with an increase of 21 percent over 1978. The edible oil ration for a commune member of this area generally was raised with some localities increasing to 2-30 jin. As of 30 November the province had already procured 172.7 million jin of oil exceeding the annual procurement plan by 103 percent. This is an increase of 82.44 million jin over the same period in 1978. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 25 Dec 79 p 1]

ANHUI HOGS--Anhui has 11.18 million head of live hogs on hand. This is an increase of 4.5 percent. [Excerpt] [Hong Kong ZHONGGUO XINWEN in Chinese 24 Dec 79 p 1]

AFFORESTATION CONFERENCE--The Anhui provincial people's government on 16 January held a provincewide telephone conference on afforestation during the winter-spring period. Directors of agriculture and forestry bureaus and responsible persons of agriculture and forestry bureaus and responsible persons of forestry and other departments concerned at municipal and county levels attended the conference. Vice Governor Hou Yong presided. Vice Governor Meng Fulin made a speech. The conference pointed out that progress in afforestation this winter has been slow in many areas, and urged all localities to take immediate action in line with the provincial people's general guidelines on afforestation. [OW191415 Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Jan 80 OW]

TIMBER SUPPLY--The planning commission, economic commission, forestry bureau and materials bureau of Anhui Province recently called a joint conference on Anhui's timber production. Vice Governor Meng Jiaqin spoke. It was pointed out at the meeting that of the 500,000 cubic meters of timber supply in Anhui Province last year, the direct utilization rate reached only 45 percent. In order to increase the timber utilization rate and better solve the contradictions between timber supply and timber consumption, the meeting called for still greater efforts to promote the experience accumulated by Hangzhou and put into practice the unified management of timber supply. The meeting mapped out a seven-point measure to strengthen the management of timber on a still wider scale, to use more substitutes, and to further improve the managerial system for timber supply in 1980. [OW081259 Hefei Anhui Provincial Service in Mandarin 1100 GMT 4 Jan 80 OW]

BRIEFS

FROZEN CATTLE SEMEN--The Breed Bull Station of the Municipal Agricultural-Industrial-Commercial Integrated Complex has cooperated with the related units in using frozen cattle semen in developing cattle raising. Frozen cattle semen technology was newly adopted by this municipality in the last few years. This technology permits the long-term storage of semen, shipment over long distances, extends the years of usefulness and is over 100 times more successful than natural mating. At present the conception rate for cows in heat is over 58 percent. This is of great importance in breeding herds of cattle, improving the quality of cattle herds and in increasing the production of milk cows. A study was made of the post-first calving milk production of cows bred under this technology and was found to be from 90 to 300 kilograms higher than the milk production of other cows. Because the utilization rate of breeding bulls is now higher, according to the present level of milk cow breeding the municipality can raise 100 fewer head of bulls and can save a great amount of fodder and feeding expenses. This station has now produced over 1.9 million doses of pellets and tubules of frozen semen. This supply is in general use in municipal cattle breeding and also is being demonstrated throughout the 26 provinces and regions and is moreover exported to foreign countries. [Text] [Beijing BEIJING RIBAO in Chinese 15 Nov 79 p 2] 11582

BEIJING AGRICULTURAL PROCUREMENT--This year Beijing Municipality's procurement of live hogs, fresh eggs, Beijing duck, milk and honey set new records. Procurement of chicken meat and live fish also exceeded that in 1978. According to statistics of concerned units, at present the municipality has already procured more than 1,898,000 head of live hogs. This is an increase of more than 62,000 head over 1978, the historical high. The amount of hog bristles and the dressed meat rate exceeded that of previous years. The amount of fresh eggs procured was 43.8 million jin, a 61 percent increase over 1978. The number of ducks procured was 3.21 million, an increase of 22 percent over 1978. The amount of milk and honey procured exceeded that of any previous year. The increase in agricultural by-products has stimulated the rural economy causing an increase in the income of the peasants and improving supplies to the city. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 27 Dec 79 p 6]

BRIEFS

FUJIAN FRUIT HARVEST--This year the total output of fruit in Fujian Province increased more than 20 percent over 1978. Except for lichee which had a decrease in output due to weather conditions, Fujian's "six big name fruits"--mandarin oranges, logans, loquats, bananas, lichees and pineapples--had a bumper harvest. The total output of mandarin oranges was more than 40 percent greater than 1978. Although this was a "small year" for longan, output increased by 200,000 dan over what is normal for a "small year." The amount of loquat procured was the best in the past 60 years. From 1 January to 31 October of this year [1979] the amount procured for bananas was more than 40,000 dan, an increase of 53 percent for the corresponding period in 1978 and for pineapple, more than 50,000 dan, an increase of 20 percent. In addition, the output of other fruits such as pears, red bayberries, persimmons, watermelons, and olives have been larger than 1978. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 21 Dec 79 p 3]

FUJIAN FARMS LATE RICE--The harvest of late rice from more than 40,000 mu on the 18 overseas Chinese farms in Fujian has been basically completed. According to initial statistics, more than 29 million jin of dried unhusked rice has been harvested. This is an increase of 13 percent over 1978 which was a record year. This year cold weather which came early this autumn greatly threatened the late rice during its heading and ripening stages. But, because the mechanization level of the production equipment on each overseas Chinese farm has been raised and advanced agricultural techniques and measures such as [applying] foliage spray and spraying hormones were implemented, damage from the cold was basically avoided. This insured a bumper harvest of late rice. [Excerpt] [Hong Kong ZHONGGUO XINWEN in Chinese 20 Dec 79 p 3]

JIANYANG PREFECTURE CITRUS--This year the mandarin orange harvest of Jianyang Prefecture of Fujian Province was a big bumper one. Total output reached 11 million jin which was an increase of 78 percent over 1978. Per unit and total production both exceeded the highest historical levels. For the past several years, 10 counties and cities in Jianyang Prefecture have fully utilized the natural resources of the mountainous areas. They have actively introduced and developed superior varieties

[of citrus fruit] such as the Wenzhou Mandarin Orange, Fuzhu, Lugan and Xuegan. The mandarin orange area in the prefecture is now more than 41,000 mu thus becoming one of Fujian's important producing areas. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 14 Dec 79 p 3]

FUJIAN SUGARCANE OUTPUT--Fuzhou, 13 Jan--In 1979 Fujian Province raised its per mu output of sugarcane from 620,000 mu of sugarcane fields above 10,000 jin for the first time in its history. The total output of sugar during the 1979-1980 sugarcane processing season is expected to reach 350,000 dun. This will represent an increase more than double the 1975 figure. The increase, in spite of serious drought in 1979, is due mainly to the policy of supplemental grain rations for sugarcane growers and bonuses for above-quota production. Since the policy was implemented in 1976 the sugarcane acreage in Fujian has expanded by 240,000 mu in 4 years and its sugar output has jumped at an annual rate of 53 percent. [OW151107 Beijing XINHUA Domestic Service in Chinese 0110 GMT 13 Jan 80 OW]

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COSTS AND FAILURES IN COUNTY FARMLAND CAPITAL CONSTRUCTION

Guangzhou NANFANG RIBAO in Chinese 24 Dec 79 p 1

[Article by Wang Chunhui [3769 2504 6540], Deputy Secretary of the Yaxian County Communist Party Committee: "Farmland Capital Construction must Proceed from Reality"]

[Text] Since liberation our county has carried out many instances of farmland capital construction and has obtained a certain degree of success. Since the 50s the county's water storage capacity has increased from 50 million cubic meters to 770 million cubic meters in 1979. This has resulted in elimination of drought damage from most farmland, an increase in soil fertility, and increased farm crop production. Last year the county's total foodgrain production was 47.6 percent higher than in 1958.

In the past 30 years, however, we have suffered no little loss in farmland capital construction because of violations against objective laws. In 1958 we excavated countless wells and dikes, thus occupying farmland; when these proved unsuitable they had to be filled in. Because of disturbances caused by the ultraleft line of Lin Biao and the "gang of four," some leading comrades voiced the slogan "in winter manage the fields, in summer regulate water, in autumn manage the slopes." This was done without distinction of different areas and with disregard of objective conditions; all areas were required to apply these principles and the results were not worth the effort. In our county the losses were considerable. At that time we did not carry out scientific analysis of objective conditions, but blindly carried out the orders from the leading body at a higher level in the mistaken belief that building small-scale water reservoirs was no solution for Yaxian county's annual drought and scarcity of fresh water. We obstinately concentrated the county's manpower, finances and materials and blindly carried out the three major Bilong [3024 7127], Lingqu [7325 2575] and Xihe [6007 3109] water

resources engineering projects with the following results. The Bilong engineering project went on for 2 years, at a cost of 600,000 man-days and 310,000 yuan; the Lingqu engineering project took 2 years at a cost of 1.2 million man-days and 1.9 million yuan; for the Xihe engineering project 10,000 people were organized into 4 efforts, at a cost of 1.41 million man-days and 1.07 million yuan. Because of the great difficulty of and the failure to meet conditions in these engineering projects, great costs were expended over a five-year period, all to no avail. This influenced the livelihood of the masses and caused strong dissatisfaction among commune members. Farmland renovation, moreover, did not proceed from reality, as when others were seen undertaking major drainage ditch excavation then one also undertook major drainage ditch excavation, when others managed slopes one also did so, and, moreover, management of low yield fields was neglected, all of which failed to produce any actual results in farmland capital construction.

We have learned from this lesson, so this year when we undertake winter farmland capital construction we will resolutely proceed from our actual local conditions, ignore the "wholesale approach," require that each brigade make suitable manpower arrangements to ensure that there are people to perform commune and brigade side-line industries, grasp diversified management, guarantee that the brigades have cash incomes, and guarantee the smooth progress of farmland capital construction. This definitely will result in increased production.

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MEASURES TO PROTECT CROPS FROM 'COLD DEW WIND' OUTLINED

Guangzhou NANFANG RIBAO in Chinese 27 Sep 79 p 3

[Article by the Guangdong Provincial Meteorological Observatory,
Provincial Agricultural Meteorological Experimental Station]

[Text] Over the past year, during the first 20 days of October and the period of heading and flowering of late rice planted over large areas in our province, the threat of "cold dew wind" (winds of October 8) has been serious. This year, because our province's late rice crops have been generally transplanted 5 to 7 days late, heading and flowering times will also occur later and the threat of "the winds of October 8" to late rice will be more serious. It is hoped that concerned departments and the broad masses of farm village cadres and masses will pay timely attention.

Since last winter, our province's weather has been abnormal, characterized by a warm winter and a damp and cold spring, fewer typhoons in summer and early arrival of autumn winds. Observations of the characteristics of weather changes in the early part of this year indicate the weather around October 8 of this year will adversely affect the later period of pollination and fruiting of late rice. Comprehensive analysis of many kinds of data indicate this year's "winds of October 8" may occur in two stages: The first occurrence may be between the end of September and the first period of the first 10 days of October. The second occurrence may be between the middle period of the middle 10 days of October and the first period of the last 10 days of October. This second occurrence may have a greater effect. If autumn typhoons encounter cold air, the "winds of October 8" will be intensified and this is worth watching out for.

At present, according to the actual experience of the masses of various localities, there are three precautions against the "winds of October 8" which can be taken: One is to concentrate on selectively breeding cold resistant varieties and on raising the level of cultivation techniques to strengthen the capability of the plants to resist the cold. The second is to grasp the agricultural weather conditions of the locality and select late rice varieties that are suitable for the local climatic

conditions, and to sow and transplant timely so that the plants will head and flower before "the winds of October 8." The third is to improve the microclimate in the paddy rice field to reduce damage by low temperatures or to spray hormones and other chemicals to help the plants tide the vulnerable period, or apply sidedressings of fertilizers around the roots to strengthen the plants' own ability to resist cold.

In late rice production, even if appropriate varieties and crop openings have been coordinated according to the agricultural weather conditions, the crops will still be damaged in those years when the "winds of October 8" are severe and when they blow early. Therefore, forceful measures must be taken to defend the crops against the "winds of October 8." According to surveys and experiments conducted at various localities in our provinces in recent years, more obvious effects of defensive measures against "winds of October 8" include reasonable control of the water content in the fields during the middle growth period of late rice so that the seedlings will turn red in time, application of fertilizers 10 to 15 days before heading, to strengthen the end period (instantaneously effective nitrogen fertilizer or thermal fertilizer or sidedressing around the roots during the latter period of growth of late rice.) If "winds of October 8" come between the end period of panicle bearing and the period of heading and flowering, good results can be obtained by spraying phosphorus (2 jin per mu of calcium superphosphate solution) or a compound fertilizer consisting of nitrogen, phosphorus and potassium can be sprayed 5 to 7 days before low temperatures set in. If "winds of October 8" occur at the beginning of filling, good results can be obtained by spraying nitrogenous fertilizers (1 jin of urea per mu). Generally speaking, during the period under the influence of the "winds of October 8", irrigating the fields can retain the temperature (draining the water in daytime and irrigating at night to raise the soil temperature by 1° to 3°C), and can also raise the dampness of the rice fields, thus reducing the damage by "winds of October 8." This method is particularly effective in resisting the dry winds of the "winds of October 8." If the fields are submerged under irrigated water for too long or too much water remains in the fields, the respiratory function of the roots and the physical and chemical states of the soil will be affected, unfavorable to the suppression of diseases. In addition, during the peak flowering period of late rice when "winds of October 8" occur, the leaves and panicles on the upper part of the plants should be shaken with a long bamboo (or rope) to stimulate opening of the flowers and facilitate dispersion of pollen and pollination, thus raising the percentage of fertilization. If low temperatures occur during the peak flowering period of late rice, then 20 PPM of gibberellin can be sprayed 7 days beforehand to stimulate early heading so that damage by low temperatures can be avoided. Temperature retaining agents for leaf surfaces or for water surface can be mixed into irrigated water in the large fields to increase the temperature of the field and of the plants. This has a definite effect upon reducing the percentage of empty and semi-filled grains. As long as active measures are taken, the damage by "winds of October 8" can be greatly reduced and surplus harvests of late rice can be realized.

TWENTY-TWO FRUIT PRODUCTION BASES ESTABLISHED

Guangzhou NANFANG RIBAO in Chinese 17 Dec 79 p 1

[Unsigned article: "Guangdong Establishes 22 Fruit Production Bases"]

[Text] The state agricultural and planning departments positively support Guangdong development of fruit production and agree to the establishment here of 22 fruit production bases. Since last year there has been a yearly allocation of 250,000 yuan of capital funding and 5,000 dun of chemical fertilizer to support construction of these bases.

Guangdong people have a long history of cultivating citrus, bananas, litchi and pineapple. These renowned fruits are sold nationally and internationally and are heartily welcomed by consumers. However, in the past few years the extreme left line advocated by Lin Biao and the "gang of four" completely devastated these fruits and other economic crops. In years past the production of mandarin oranges, tangerines and oranges exceeded 1.9 million dun per year, but by 1973 yearly production had fallen to over 800,00 dun. In many places bananas and plantains were squeezed in along dikes so that there even was no way to prop up the fruit-laden branches.

In order to change these conditions the agriculture departments and the State Planning Commission decided in 1978 to establish 100 fruit bases throughout the nation, and of those Sichuan and Guangdong will each have 22. In Guangdong the 14 places are Puning [2528 1380], Chenghai [3397 3189], Chaoyang [3390 7122], Chaoan [3390 1344], Raoping [7437 1627], Jieyang [2263 7122], Huazhou [0553 1558], Xinhui [2450 2585], Nanhai [0589 3189], Sihui [0934 2585], Zengcheng [1073 1004], Huaxian [5363 4905], suburban Guangzhou and Meixian [2734 4905]. These are important citrus counties (districts) with a total area of 380,000 mu and have been designated as mandarin orange, tangerine and orange bases. The four counties (districts) of Dongwan [2639 5451], Zhongshan [0022 1472], Chuande [1556 1795] and Huangpu [7806

1033], with a total area of 140,000 mu have been designated as banana and plantain bases. The three counties (districts) of Dongwan, Conghua [1783 0553] and Guangzhou, with a total area of 430,000 mu, have been designated as litchi production bases. Xuchou [1776 5113] county, with an area of 150,000 mu, has been designated as a pinaapple production base. The agriculture departments and the General Supply and Marketing Cooperative make a yearly allocation of 250,000 yuan and 5,000 dun of chemical fertilizer in support of developing these fruit production bases.

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COUNTY SCIENTIFIC PERSONNEL UTILIZED EFFECTIVELY

Buangzhou NANFANG RIBAO in Chinese 17 Dec 79 p 1

[Article by Liang Beiyuan [2733 0554 0337] and Su Boxun [5685 0130 8133]: "Respect Expert Opinion in Correctly Guiding Production: The Gaozhou [7559 1558] County Party Committee Gave Vent to Agrotechnicians, Defeated "Cold Dew Wind" and Other Assorted Disease and Pests, Reaching Unprecedented Levels of Foodgrains Production"]

[Text] The Gaozhou County Chinese Communist Party Committee took the initiative in inviting agrotechnicians to act as advisors, thoroughly utilized their scientific knowledge and skills, and promoted the development of agricultural production. This year the county's spring foodgrain and early rice harvests were bumper crops, the late rice crop showed a 400 billion plus jin increase over the same period last year while the whole year's total foodgrain production reached historically unprecedented levels. There were developments in all aspects of the diversified economy and in the commune members' industrial side-line occupations.

Gaozhou county has a relatively rich base in agrotechnology. Over 140 of the county's scientific and technical cadres have received specialized education in agricultural institutes and colleges. There also are a number of "local experts" who practise comparatively high levels of scientific farming. During past years the party committee did not hold a very high opinion of them and they suffered considerable hardship. After implementing the spirit of the Third Party Plenum the county party committee summed up experiences and realized that they should learn from the experts and use a scientific attitude to guide production.

During the last 10 days of May this year, before the beginning of the early rice harvest, the county party committee organized a conference of the agrotechnician cadres and the "local experts" from all the different areas to sincerely study

measures for late crop production. The agrotechnicians sought truth from facts in analyzing all the non-beneficial factors affecting late crop production and made the following suggestions: 1. Because of the frequency of "cold dew wind" during the past few years, there should be a continual emphasis on being "early," with over 70 percent of the county's late rice crop sown around the Summer Solstice and the transplanting to take place around the Beginning of Autumn which will guarantee that before the "cold dew wind" arrives in mid-October the rice will have full heading and be in the milk, thus avoiding wind damage. 2. In carrying out early transplanting, sturdy rice varieties should not be neglected; there should be strict requirements that different areas carry out sparse sowing of sturdy rice with sprouting to take place within 50 days to guarantee that the rice sprouts are free of pests, disease and barnyard grasses. 3. In years past the county had 15-16,000 mu of luohouhe [5507 0683 4421] which frequently was lost because the top dressing was not applied till after the Autumnal Equinox. This year the luohouhe should be handled earlier, 20 days after the rice transplanting, in an unremitting effort to bring about balanced increased production over a large area. 4. The early periods of late crops have high temperature and abundant rain so that fertilizer is easily broken down and washed away. In the later period the temperatures are low and the weather is dry so that the fertilizer breaks down slowly. Therefore, in the early period there should primarily be green manure and fertilizer mixed with earth, and the limited amounts of chemical fertilizer should be saved for the middle and late periods, which will raise the rate and richness of fructification. The county party committee accepted the agrotechnicians' opinions and sincerely implemented them throughout the county and they were a major factor in obtaining a late crop bumper harvest.

The Gaozhou county party committee leading comrades in charge of agriculture still maintain close contact with the agrotechnicians, read reports on agrotechnology, go to the agro-research institutes and stations to learn about conditions, carefully listen to opinions in order to strengthen their leadership of agricultural production. This August there was a period of heavy rain, 24 rainy days in one month with over 100 millimeters more rain than in the same period last year. This caused the rice shoots to spindle, suffer from wengu [4773 2661] disease and water swelling. The comrades of the county party committee went to Xieji [6200 7741] commune where they observed the cadres of the agrotechnology station lead the masses in separately carrying out various measures in the different field types, soil conditions and seedling stages to gain control over the spindling and other diseases. The county party committee quickly summed up and popularized these experiences and the entire county immediately carried out drainage ditch excavation

to drain and dry out 500,000 mu of land, over 90 percent of the total late crop fields, thereby effectively overcoming the ill effects of the bad weather.

This year, in order to make even more effective use of the agrotechnicians, the county party committee increased the allocations to matters of agrotechnology, positively implemented policies regarding agrotechnicians, helped them resolve both work and personal problems, simultaneously starting up all levels of agricultural training classes, and training a backbone of agrotechnicians. Since last year this county's 4 levels of agrotechnicians have initiated over 160 scientific experiments, over 70 of which have obtained results which were beneficial in aiding production.

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EMPHASIS ON NUMBER OF HOGS MARKETED

Guangzhou NANFANG RIBAO in Chinese 15 Dec 79 p 2

[Article by Ma Dongfu [7456 2639 1133]: "To Develop Hog Raising it is First Necessary to Raise the Rate of Sales"]

[Text] During the past 20 years there has been a great increase in the number of hogs on hand in Guangdong province, however the rate of sales has become lower and lower, dropping from 93 percent in the 50s to 54 percent last year. This means that the level of hog raising in Guangdong is declining. Formerly a hog could be but on the market after half a year, while it now requires over one year, which not only increases labor and fodder consumption many times over but moreover is unable to satisfy market needs. The contradictions here are all too obvious and have reached the point where they must be resolved with all sincerity.

There are a number of reasons for the low rate of sales for hogs and it is a matter of curing the illness by applying the correct medicine. We believe that the following points are worthy of consideration.

The first problem is that of guiding ideology. What is the purpose of hog raising? For a long time the explanation given from top to bottom has been "more hogs, more fertilizer, more foodgrains." A lop-sided emphasis on collecting manure resulted in the lop-sided pursuit of the number of hogs on hand and the malady of unconcern for the rate of sales. Simply because having more stock on hand meant reaching the goal of collecting more manure no one paid much attention to such things as how long each was raised, the labor expended, the amount of fodder used, the speed of fattening and the amount it all cost. In a number of places "long-lived hogs" were quite common so that people became accustomed to this and no longer thought it strange. Actually the goal of hog raising ought to be obtaining pork and making a profit. While hog manure is of course important, in the end it is but a side-product and therefore of a

secondary nature. In other words, we ought to establish the following guiding ideology: in hog raising while it is important to have more hogs, more fertilizer, and more foodgrains, it is even more important to have more pork and more money. Only in this way will there be attention to the economic effects, extensive scientific hog raising, rapid fattening, and an effort to raise the sales and pork production rates. With higher sales and pork production rates hog raising will then be profitable which will then stimulate increased hog raising and in this fashion the goal of more manure can be attained. On the contrary if the rate of sales is low hog raising will lose money so that, objectively speaking, although one desires more hog raising and more manure collecting, in actuality the results will be contrary to those desired. This point is clearly demonstrated by the path Xinhui [2450 2585] county followed in developing collective hog raising. For many years the leadership there repeatedly used the principle of "more hogs, more fertilizer, more foodgrains" to mobilize the commune members in developing hog raising, however because the sales rate declined hog raising lost money and fewer and fewer hogs were raised. In early 1974 the county's number of hogs on hand was 37 percent lower than in 1971. Later, after scientific hog raising was popularized and the sales rate was increased there then was money to be made in hog raising so more and more hogs were raised. At the end of last year the county's number of live hogs on hand was 1.7 times higher than in the same period of 1974. This shows that development of the hog raising industry must first of all emphasize more pork and more money and cannot place one-sided emphasis on more hogs and more manure. Only in this fashion will there really be relatively major developments in the hog raising industry.

The second problem is fodder. Fodder is the material base for the development of the hog raising industry and is the key link in raising the rate of sales. Because of this we ought to construct our plan for hog raising on the basis of a suitable fodder supply, rather than try to "cook a meal without rice." A weak fodder base with blind pursuit of head counts of hogs on hand must certainly lower the sales rate. At the same time in the selection of a proper ration of concentrated and coarse fodder we should rely primarily on concentrated fodder. Hogs are single stomached animals and basically unable to digest and absorb coarse fiber. Excess consumption of coarse fodder overburdens the intestine and stomach and increases consumption through raised body heat. The digestive capabilities and protein requirements of hogs are relatively large. Last year the National Conference on Hog Fodder Standards passed deliberations regarding this and also recommended that the nation follow the trial operations in the "Jixiehua Yangzhuchangde Siyang Biaozhun Caoan--Draft Plan on Fodder Standards for

Mechanized Hog Feedlots." All hogs whether in the developing, growing or fattening stage have a nutritional standard which requires that each kilogram of fodder produce a digestive capacity of from 2,600 to 2,700 kilocalories and from 92 to 117 grams of protein. This confirms that in order to guarantee the nutritional standards and attain the goal of quickly fattening the hogs they must feed primarily on concentrated fodder. Otherwise the fodder will have insufficient nutrition and the hogs will merely remain alive rather than fatten and they could even lose weight. This would be a waste of fodder and human effort. Therefore, the way to solve the problem of fodder consumption is to see it as a dialectical problem, rather than to engage in metaphysics.

The third problem is policy. Among the economic policies carried out in support of hog development there are some which are not beneficial to raising the rate of sales and the pork production rate. In order to employ economic policy in encouraging cadres and commune members to be concerned about raising the rate of hog sales we advocate the following: (1) The national and collectives' method of issuing fodder rations according to the sow head count should be changed to issuing fodder rations according to the number of live piglets produced. This will be beneficial in keeping superior sows and eliminating inferior sows, raising the sows' farrowing rate and rate of live piglets farrowed, reducing the number of sows raised, saving fodder consumption and raising the level of the rate of hog sales. (2) The national and collectives' method of issuing coarse and concentrated fodder according to the number of porkers being raised should be changed to issuing fodder according to the weight of porkers sold. To take care of the fodder needs while raising the porkers a portion of the fodder could be provided first and the rest given when the sale is made. (3) Under the conditions of a non-fluctuating price structure in the state purchase of porkers, quality will determine the price. This will encourage the breeding and spread of fine breeds of hogs, take advantage of the feature of rapid fattening of fine breeds, reduce consumption of fodder and labor and raise the rate of sales.

The fourth problem is the management system of hog raising. To raise the rate of sales the fodder must be scientifically mixed and there must be improvements in the areas of environmental hygiene, breeding and disease prevention. All of these are dependent on the efforts of the hog raising personnel. Accordingly, there is a need for the state farm and commune collective hog feedlots to establish and perfect a complete, suitable hog raising management responsibility system. Without such a system it simply wouldn't matter how many hogs were raised, or what the quality might be. If the positive spirit of the hog

raising personnel is not mobilized then the phenomenon of "long-lived hogs" will easily appear. In order to mobilize the spirit of the hog raising personnel, to feed the hogs scientifically, save on basic expenses, raise the rate of sales, and strive for profits Foshan [0514 1472] prefecture popularized a basic work point awards system. The hog raising personnel were given the same labor rewards as in agriculture wherein the 3 to 5 highest work points were evenly divided as labor rewards. Moreover, from 3 to 5 percent of the pure profit from hog raising was deducted to use as rewards. The results were very good. Practice proves that these methods raise the hog raisers' positive spirit, increase the rate of sales, turn hog raising into a profitable venture, and increase the collective's income.

In summation, to develop the hog raising industry there must be scientific hog raising, an effort to raise the rate and sales and pork production rate. Hog raising must be put on the basis of more hogs, more pork, more money and benefit to the state, the collective, and the commune members. This major problem which now faces the development of the hog raising industry is one that cannot easily be overlooked.

11582
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BRIEFS

CHENGHAI COUNTY PEANUT CONFERENCE--This year the Chenghai [3397 3189] county autumn peanut harvest was pleasingly abundant. According to preliminary statistics the county had 41,000 mu of autumn peanuts, each mu yielding an average of 305 jin, with a total yield of over 125,000 dan. The per unit area yield and the total yield were 40 percent or 1.3 times greater than those of the same period last year, both breaking historical records. During the early and middle 60s Chenghai county was famous throughout the province for producing the highest peanut yields. Early this year, according to a decision of the Provincial Revolutionary Committee, Chenghai county was made a peanut commercial production base, and the broad commune members positively undertook planting 70,000 acres of spring peanuts and obtained a good harvest averaging 317 jin per mu. In order to obtain an abundant autumn peanut harvest all brigades sincerely summed up and applied their experience from the spring bumper crop, energetically improved their cultivation techniques, continually raised the level of cultivation and after planting performed careful management. Consequently, the county's autumn crop of peanuts is generally growing in a superior fashion, they flowered and put down spikes early, and the number and plumpness of the pods were both increased. [Text] [Guangzhou NANFANG RIBAO in Chinese 17 Dec 79 p 2] 11582

RURAL ENTERPRISES EXHIBITION--The exhibition on products of the commune and brigade enterprises in Guangdong jointly held by the Guangdong Management Bureau of commune and brigade enterprises and the Guangdong agricultural exhibition hall opened in Guangzhou in the morning of 14 December. Responsible persons of Guangdong Province and Guangzhou Municipality and departments concerned attended the opening ceremony. Wang De, secretary of the Guangdong Provincial CCP Committee, cut the ribbon of the exhibition. This is the first exhibition of such nature ever held in Guangdong since liberation. Some 5,000 products are on display. Up to the end of 1978, there were 85,000 commune and brigade enterprises throughout Guangdong, employing 2.08 million people earning a total income of the three-level economy of the people's communes. The current exhibition will last for 3 months. [HK091425 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 15 Dec 79 HK]

TAISHAN COUNTY LATE RICE--After another good early rice harvest in Guangdong's Taishan County this year, the late rice harvest also achieved a bumper harvest. The total output of late rice increased 30 percent over 1978. Throughout this year Taishan County has also seen new developments in forestry, animal husbandry, sideline occupations and fishery. The whole county has expanded the afforested area by 100,000 mu. More than 7,000 mu of new mulberry trees were planted. The fish raising area was enlarged by more than 20,000 mu. There was an increase of nearly 10,000 head of beef cattle and goats. Live hogs and poultry also had considerable development. While harvesting the late rice, the county planted 150,000 mu of such crops as wheat, vegetables and medicinal herbs. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 3 Dec 79 p 5]

NANHAI COUNTY WINTER WHEAT--After completing the autumn harvest and winter planting Yanbu [7770 2975] commune of Nanhai county immediately turned to wheat field management work, re-applied the early period top dressing, vigorously attacked the three-inch-barrier (san cun guan [0005 1407 7070]) in their determination to win an abundant winter wheat harvest. "Three parts cultivation and seven parts management" with timely attention to winter wheat field management are the key links in gaining an abundant winter wheat harvest. Therefore, the commune party committee held an on the spot wheat management conference at the Dongfang [2639 2455] production team of the Yanbu brigade. By the first 10 days of October the Dongfang production team had already completed ahead of time the task of sowing 230 mu of wheat and then immediately turned to field management, including the first fertilizer application of 150 mu of wheat, which had a robust, lively appearance. The commune party committee popularized this production team's experience in re-applying the early period fertilizer, requiring that each brigade immediately turn to winter wheat field management, re-apply the early period fertilizer and vigorously attack the three-inch-barrier to guarantee an abundant winter wheat harvest. With the stimulus of the on the spot conference the entire commune's 12 brigades speedily went into action and began applying the winter wheat top dressing. By the middle period of October the commune had applied the first fertilizer to 8,5000 mu of winter wheat, fully 68 percent of the land sown with winter wheat. The early-sown wheat has already grown two inches. [Text] [Guangzhou NANFANG RIBAO in Chinese 14 Dec 79 p 1] 11582

GUANGDONG AGRICULTURAL HARVEST--This year Guangdong achieved a bumper agricultural harvest. The total output of grain exceeded that in 1978 by 1.5 billion jin. This was the second year in a row for a bumper harvest from the sugar crops. Total output was 8 million tons. The total output of peanuts increased 8.3 percent over that in 1978. Soybeans, rape and pond fish as well as hogs and cattle also achieved increases. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 27 Dec 79 p 2]

AMERICAN HOGS FOR GUANGDONG COMMUNE--At the end of 1978 a Hong Kong compatriot gave Shakuang Commune in Kaiping County 10 head of American hogs of fine breeds. These hogs were of the Luoke [transliteration, possibly Duroc], Hampshire, Large White [also known as Yorkshire] and Large Black breeds. There were five boars and five sows. At first the sows weighed only 6-70 jin. Now they are more than 500 jin with the smallest being more than 300 jin. The Hampshire sow gave birth to eight purebred piglets in April of this year [1979]. Another three sows have been bred. There are already more than 2,500 piglets born of native sows bred to the five American boars. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 10 Dec 79 p 10]

HAINAN TROPICAL CROP CONFERENCE--The Hainan region recently held a conference on tropical crops to sum up and exchange experiences, reward the progressives and discuss and formulate the production tasks and measures for tropical crops in 1980. Luo Tian, first secretary of the Hainan regional CCP Committee; Wei Nanjin, second secretary; Liang Cheng, deputy secretary; and (Li Liangguang), Standing Committee members took part in the conference, listened to reports and gave speeches. Luo Tian urged the participants to bring about a greater development in the tropical crops in Hainan in 1980. It was revealed at the conference that in 1979, 165,000 mu were sown to tropical crops, surpassing the plans by 30 percent. [HK150732 Haikou Hainan Regional Service in Mandarin 0330 GMT 29 Dec 79 HK]

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GUIZHOU

BRIEFS

CHEMICAL FERTILIZER--The chemical fertilizer industry in Guizhou fulfilled the year's plans for the state ahead of schedule on 10 December. One million tons of chemical fertilizer were produced, an increase of 44.7 percent over the corresponding period of last year. [HK150846 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 27 Dec 79 HK]

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HEILONGJIANG

BRIEFS

HEILONGJIANG 1979 CORN OIL--This year Heilongjiang Province vigorously popularized extracting corn oil. From January to October, 10.69 million jin of oil has been produced. This is a 62 percent increase over the corresponding period in 1978. It is equal to more than 80 million jin of soybean oil. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 8 Dec 79 p 7]

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BRIEFS

HUBEI RURAL INCOME--According to HUBEI RIBAO report, Hubei Province already has 3,613 production teams whose per capita average net income has reached more than 200 yuan this year. Among these, 97 production teams have exceeded 300 yuan as their average per capita net income. Four production teams have exceeded 400 yuan (not including Wuhan Municipality). Given a per capita average net income of 200 yuan and a family of five people plus 300 yuan from household sideline production, then the annual total income is 1,300 yuan. Generally the average household has one and a half workers which provides a monthly income of more than 110 yuan. The monthly wage for a worker is more than 60 yuan. This is more than the income of a Grade Five urban worker. These newly prosperous peasants are generally in the cotton and grain producing prefectures of Jingzhou and Huanggang. There are very few teams with [average per capita net] incomes of 200 yuan in the mountainous areas. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 12 Dec 79 p 5]

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HUNAN

BRIEFS

PIG RAISING--In 1979, 15.5 million pigs were sold in Hunan, an increase of 6.1 percent over 1978. The state commerce departments have purchased 8.8 million head of pigs during this period. The average weight of each pig increased by 12 jin 3 liang over 1978. The increase in weight alone is equivalent to an increase of 0.8 million pigs. The year's plans for purchasing pigs were overfulfilled ahead of schedule. All the cold storage facilities in the province are packed with frozen meat. The ample supply of pork for the rural markets has not been seen in the past 10 years. [HK171348 Changsha Hunan Prvvincial Service in Mandarin 2315 GMT 31 Dec 79 HK]

HYBRID RICE--In 1979, the peasants in Hunan planted 23,600 mu of hybrid rice to produce seeds for sowing in 1980 with an average per mu yield of 98 jin 7 liang. This is an increase of 20.6 percent over 1978. The areas sown to cultivating hybrid rice seed throughout Hunan are 570,000 mu with an average per mu yield of 78 jin 1 liang, an increase of 20 percent over 1978. [HK171348 Changsha Hunan Provincial Service in Mandarin 1100 GMT 1 Jan 80 HK]

HUNAN COTTON, BAST FIBERS--Cotton output in Hunan increased more than 20 percent over 1978. The output of bast fibers was 49.7 percent greater than 1978. [Excerpt] [Hong Kong ZHONGGUO XINWEN in Chinese 25 Dec 79 p 1]

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BRIEFS

FARMING MATERIALS--Last year Jiangsu Province provided its rural area with 4.1 million dun of chemical fertilizers, 20 dun of insecticides, 18,000 dun of plastic sheets for farm use and 14 million bamboo poles in support of agricultural production. [OW191415 Nanjing Jiangsu Provincial Service in Mandarin 1000 GMT 17 Jan 80 OW]

FIELD MANAGEMENT--Peasants in Jiangsu have stepped up field management for over-wintering crops. By 17 January, 29.67 million mu of wheat, barley, naked barley and rape had been fertilized, about 68 percent of the total acreage. The Jiangsu provincial agriculture and forestry bureau on 18 January issued a circular calling on all localities of the province to step up the field management for over-wintering crops and to prepare for spring sowing. [OW200142 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 19 Jan 80 OW]

JIANGSU HOGS--As of 31 October, the number of live hogs on hand in Jiangsu had reached 25.17 million head, an increase of 3.5 million head over the corresponding period in 1978. The number of hogs procured in the first 10 months of this year was 11.51 million head, an increase of more than 1.1 million head over the number procured in all of 1978. The number of hogs on hand as well as the number procured exceeded the highest historical levels. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 13 Dec 79 p 5]

JIANGSU PEOPLE'S SAVING DEPOSITS--Saving deposits in both the urban and rural areas of the Jiangsu Province has exceeded 1 billion yuan, increasing by 254 million yuan in 1979. Even after the raise of non-staple food prices, saving deposits increased by more than 38 million yuan in November and December. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 10 Jan 80 OW]

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JIANGXI

BRIEFS

JIANGXI AGRICULTURAL FIBERS--By 25 December, the people in Jiangxi had purchased 808,939 dan of cotton, fulfilling the purchase plans by 101.1 percent, an increase of 185,200 dan over the corresponding period of 1978. By 20 December, 255,541 dan of hemp and jute had been purchased, fulfilling the purchase plans by 127.8 percent, an increase of 94,000 dan over the corresponding period of 1978. Pengze County is a key cotton producing county, and it fulfilled the purchase plans by 139.4 percent. Shanrao Prefecture is a key hemp and jute producing area and it fulfilled the purchase plans by 134.2 percent. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 31 Dec 79 HK]

JIANGXI RAMIE HARVEST--Jiangxi Province this year reaped over 26,000 dan of ramie from its 26,000 mu of ramie fields. This represents a 70-percent increase over 1978 output. [Beijing Domestic Service in Mandarin 1200 GMT 20 Dec 79 OW]

JIANGXI TIMBER PRODUCTION--The people in Jiangxi have fulfilled timber production ahead of schedule this year. The procurement of timber to the province and central authorities has been fulfilled 61 and 30 days respectively ahead of schedule. One of the key timber producing bases in the country, Jiangxi is responsible for supplying timber to 11 provinces and municipalities. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 23 Dec 79 HK]

PIG RAISING--By 20 December, the purchase plans of pigs in Jiangxi were fulfilled by 100.5 percent, an increase of 450,000 head over the corresponding period of 1978. This is an increase of 14.2 percent, surpassing the highest level ever recorded in 1972 by 8.3 percent. The procurement of pigs in the province increased by 410,000 head over the corresponding period of 1978, and increase of 16 percent, surpassing the level in 1972 by 7.3 percent. [HK171321 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 29 Dec 79 HK]

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PLANTING GRASS ON A LARGE SCALE ENCOURAGED

Hohhot NEI MONGGOL RIBAO in Chinese 9 Nov 79 p 2

[Article by Bai Xuenong [4101 1331 6593], Secretary of the Ao Han Banner Chinese Communist Party Committee: "Planting Grass Makes Livestock Prolific and Crops Abundant"]

[Text] Editor's Note:

A series of rapid changes brought about by many years of persistence of the Ao Han Banner in planting grass was truly surprising and pleasing.

Planting grass on a large scale has changed a thousand years of "relying on heaven to raise livestock" to "planting grass to raise livestock"; it has also changed the villages' "planting grains, not grass" to "rotating grass and grains". This is a very important strategic measure in developing stable, high quality productive animal husbandry and in promoting agricultural development.

The events in Ao Han Banner prove once again that those who say planting grass is "concentrating on details and ignoring the main objective" and "tiring the people and wasting the resources" can be put to rest!

Not only is it unavoidable that we obtain more advanced international experience in animal husbandry, follow the road of Chinese-style modernization in animal husbandry, and systematically, selectively, and experimentally extend to planting of pastures from individual sites to whole areas, we must also hasten our steps.

"Looking at the grass one can tell whether there were changes or not; whether the changes were good or bad depends on whether grass was planted or not." Our Banner's experience proves that this seemingly common phrase contains

profound meaning. The people of our Banner started planting grass as early as 1958; but only after some complications, and not until very recently, has it started to develop rapidly; last year, the size of the planted pasture lands reached 450,000 mu. Because the masses have tasted the advantage of planting grass from their own personal experience, this year, planting grass has taken a great step forward; the entire Banner has fulfilled its plan for planting 1 million mu of grass.

Our banner's engaging in planting grass on a large scale has not only promoted the stable development of animal husbandry but has also been advantageous to agricultural development. It has also had an impact on consolidation and development of the collective economy and on the increase in commune members' income.

Our banner is in an area where crops and livestock are both produced. The sand formation in the northern sandy land and barren hills is fairly serious. In the mountainous area of the south, soil has been washed away by the rain; pastures are poor and have thus adversely affected the development of animal husbandry. In order to change fundamentally the natural pasture's low productivity, to solve the problem of inadequate pasture and to rapidly promote the development of animal husbandry, our banner once again grasped firmly the task of planting grass on a large scale once the "gang of four" was crushed. In the areas where crops are planted, we actively promote grass planting and practice crop and grass rotation. In livestock areas and areas which are half livestock and half crop land, we plant sweet clover and perennial alfalfa to convert these areas into pasture bases. At the same time, in these livestock and livestock crop areas, we have established 25 prairie production brigade stations and five grass seed development centers; this will be helpful to the smooth development of grass planting. Because the acreage of planted grass in the rural livestock areas increased every year and because of high yields of high-quality and nutritious grasses, the reproduction and protection of all livestock in the banner have been greatly enhanced through winter and spring.

The bumper harvests achieved by our banner in animal husbandry in the past year and this one can be traced directly to the planting of grass on a large scale. Today our banner owns in total 567,800 head of small and large animals, and there is livestock everywhere. A novel thing also appeared in our banner: Changshen Dianze Production Brigade of Changshen Commune established a pasture grass seed farm in 1973. Besides supporting all production teams with large quantities of high-quality pasture grass and producing large quantities of grass seeds for communes and brigades in other areas, it also established a hay crushing and processing factory which supplies nearly 200,000 jin of alfalfa meal to the Anshan and Chifeng Areas in the past few years.

Planting pasture grass on a large scale can greatly promote the development of the hog raising industry. Sweet clover, alfalfa and Shadawang [?Astragalus] are good feed for hogs. All production teams in the banner which engaged in collective hog raising use pasturage to feed the hogs. Sijiazhe, Linjiadi, Xinhui, Xindi and Fengsho communes all use sweet clover and alfalfa in the

development of their hog raising. As of the end of June, Sifiaze commune had 14,898 hogs. Reshuitang, Dongbeigou and a third brigade in Linjiadi commune have all reached the goal of "one hog for every person."

Planting grass on a large scale has also promoted the development of chicken and rabbit raising. It is also worth pointing out that since a large quantity of high-quality pasture grass has been planted, there are more flowers, which has increased the sources of honey. Our banner's bee-raising industry has flourished as a result.

In agriculture, grass planting and the rotation of crops and brass improves soil structure from its very foundation and reinforces soil fertility; they are important methods in turning low productivity into high productivity. In 1978 our banner had about 100,000 mu of crop rotating grassland. According to studies, the crop output on rotating land is twice or more than twice as much as in non-rotating land. Last year, the rotating grassland of Linjiadi commune was about 10,000 mu; its total crop output reached 8.6 million jin, which was 12 percent higher than the great harvest of 1970. In the last 2 years, that commune's Shuangmio Brigade has been rotating crops on more than 1500 mu of grassland every year; their 1978 output was 350,000 jin more than in 1977. By contrast Songshugou Brigade, with basically similar conditions but less crop rotating grassland (about 300 mu), had an output only 20,000 jin more than the year before. There are even more outstanding examples: the third production team of Xinfa Brigade, Xinhui Commune, had a 39-mu piece of cultivated land which, prior to grass planting, produced 42 jin per mu. Last year, after a crop of grass, they used the land to plant grains. The result: the output increased on a great scale. The per-mu output was 254 jin, six times higher than before grass was planted. The third production team of Wulanbasu Brigade, Changshen Commune, used crop rotating grassland to plant corn last year; the output was 700 jin per mu. The adjacent land with no crop rotation produced only 270 jin of corn per mu. How vivid is the contrast in the way grass planting and grass/crop rotation can increase productivity in agriculture!

Planting grass on a large scale is not only advantageous to the development of livestock industry, agriculture and a diversified economy, but income from grass seeds is also large. The price of grass seeds is much higher than grain; last year, our banner produced 5.79 million jin of grass seeds, which were equivalent to about 15 million jin of grain in value. Income from grass seeds has been a very large percentage of total income in Linjiadi, Wanyinze and Dadianze communes. In the 3 years from 1976 to 1978, Linjiadi commune had an income of 200,000 yuan from grass seeds; because of the increase in income from various sources, particularly from grass seeds, the average income of a commune member in 1978 increased from 1975's 36 yuan to 61 yuan. The sixth production team of Dongjing Brigade of that commune was a poor team before they started planting grass in 1975; in 1978, their average income on grass seeds alone was 15 yuan per person, and the average commune member's income increased to 59 yuan, which started to change their poor conditions. The situation in Dadianze commune is even more exciting. This commune had an income of 223,000 yuan from grass seeds alone, and every

member had an income of 20 yuan from it. The value of a work day of this commune's Boligaoju production team of Yongyuenhou Brigade was only 0.20 yuan in the past. Last year, they made 9,000 yuan on grass seeds; after paying back their government loan, the value of a work day was raised to one yuan.

9539

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COMMUNE BRIGADE ENTERPRISES PROSPER

Development of Enterprises Brings Benefits

Hohhot NEI MONGGOL RIBAO in Chinese 10 Oct 79 p 1

[Text] Rural communes and production brigades in this area are actively utilizing local resources, vigorously building commune- and brigade-run enterprises and are working hard to reach what the central government has demanded: that commune- and brigade-run enterprises should achieve a greater development.

Right now, every league, city, banner and county in this area has established a management department for commune and brigade enterprises; over 90 percent of all the banners and counties have established supply and marketing companies for commune and brigade enterprises. The number of such enterprises in this area has reached 16,064, among which are crop cultivation, animal husbandry, agricultural and sideline products processing, construction, industrial (coal mining, machinery, chemical and light industry) and transportation enterprises. In 1978, the total income of these enterprises was over 375 million yuan which was approximately 16 percent of the income of people's communes under the three-level economic system. So far this year, the income of our area's commune and brigade enterprises in crop cultivation, animal husbandry, and agricultural and sideline products processing alone has increased two times compared with that of last year.

Development of these enterprises has supplied large amounts of raw materials and industrial products to society. Last year, this whole area's commune and brigade enterprises produced 11,000 taels of gold (50 percent of the entire area's gold output), 62,000 tons of iron ore, 2,370,000 tons of coal and 5,290,000 parts for agricultural machinery. There are also large quantities of iron and wooden farm tools, cement, lime and bricks.

These enterprises supplied a large amount of funds to the development of agricultural and livestock farming industries. The production level of our area's agriculture and livestock farming industry is comparatively low; catching up with the pace of the Four Modernizations requires strong

economic strength; even though the government has invested a significant amount of money every year, essentially it is still up to communes and brigades themselves to accumulate funds. In 1978, Ulanqab League, Xilin Gol League, Bayannur League, and Ih Ju League as well as the cities of Hohhot and Baotou had a total profit of over 33.5 million yuan which was 3.5 million yuan more than the government's special investments in the People's Communes. Out of that, 5,800,00 yuan was used in agricultural machinery, 3.05 million yuan in basic construction of farmland and pasture, 13.52 million yuan in commune and brigade-run enterprises expansion and their re-investment, and 2.77 million yuan in support of poor production teams and development of collective welfare undertakings. The Jaoda League alone made a profit of 11.13 million yuan from its commune and brigade enterprises in 1978. In recent years, Mianduhe Commune of Xikueitu Banner in Hulunbuik League took out 3 million yuan from the income of its commune and brigade enterprises and invested it in farmland construction and agricultural machinery, which enabled the commune to achieve mechanization and adequate water conservance facilities, and also enabled it to transform from a commune that used to depend on the government for food supplies to one that now provides 4 million jin of marketable grain to the government [annually].

The development of these enterprises in our area illustrates their function of direct service to agricultural and livestock production and service to commune members' livelihood. In the past, because some communes and production brigades had no agricultural machinery repair industry, farm tools could not be repaired and machines would just lie idle if they broke down. The production brigades would have to send people to other areas to get them repaired. Not only were time, manpower, and resources wasted, but agricultural production was also adversely affected. Now with their own commune- and brigade-run industries, they can do their own repair, not only saving manpower and resources but also accumulating funds. In the past, the No 6 Commune of Chahar Yu-i-hou Banner of the Ulanqab League supplied 300,000 jin of edible oil to Baotou every year, but, for lack of processing facilities, it had to ship 900,000 jin of oil seeds to Baotou by cargo train for processing and 400,000 jin of hemp seed cakes back again. After the commune started an oil seeds processing factory, freight volume decreased about one million jin a year; it saved more than 3,000 yuan on transportation costs alone and had an additional income of about 40,000 yuan from the processing operation.

The development of commune- and brigade-run enterprises has also opened wide the doors of productive occupation to the rural labor force. Our area has a cold climate and a short frost-free season; every winter a large number of workers remained idle. Other old or physically weak people who were unable to do field work also stayed at home because there were no suitable jobs for them. Undertaking of commune and brigade enterprises on a large scale can better utilize this labor force on the vast battle line of production, enabling them each to have a place, creating wealth for the country and increasing income for the collective and individuals. Five elderly persons in the Bao'an Brigade of Dalin Commune, Tongliao County, participated in the brigade's nitre extracting industry, thereby earning 12,000 yuan a

year for the brigade. Right now, the number of people who participate in our area's commune and brigade enterprises has reached 238,000; they have brought in 139.47 million yuan for the communes and production brigades in the first half year.

Our area has abundant natural resources, minerals, pasture, uncultivated mountains and hills, and its potential for the development of commune and brigade enterprises is very strong. But, a few years ago under Lin Biao's and the "gang of four's" disruption, commune and brigade enterprises were labeled "capitalism", "putting sideline production above agriculture" and "not engaging in legitimate business", which seriously interrupted the development of this type of enterprise. Those communes and brigades which had not yet started an enterprise would not dare to start one; those who had already started were forced to quit. The result was that communes and production brigades had to stick to agriculture and grain production as their only business; the agricultural economy was at a prolonged standstill, and the poor, backward outlook could not be changed. After the "gang of four" was crushed, the vast cadres and masses, in the process of severely criticizing Lin Biao's and the "gang of four's" extreme leftist line, started to liberate their own thought; they started setting up commune and brigade enterprises according to local conditions. They established themselves using local resources. Thus our area's commune and brigade enterprises developed gradually from small to large, from backward to advanced, and from a low to a high level. But compared with the national level, the total output value of our area's commune and brigade enterprises is not even equal to that of a country in an advanced area, and the proportion of their output volume in the people's communes' three-level economic system was only about half the national level. Because of the influence of Lin Biao's and the "gang of four's" extreme leftist line, leaders in some areas still hesitate to develop commune and brigade enterprises; some units do not treat these enterprises the same as the state-operated enterprises or even treat them the way private enterprises used to be treated. In order to solve these problems thoroughly and enable our area's commune and brigade enterprises to develop faster, the revolutionary committee of this autonomous region summoned a meeting on the work of these enterprises. At the meeting the participants conscientiously studied relevant documents from the central government, summarized the experiences and lessons gained in the development of these enterprises, pointed out that the development of commune enterprises was a correct road for speeding up the development of agricultural and livestock farming production, and concluded that the commune and brigade enterprises were something that had to be established. At the meeting they asked leaders from every level to pay serious attention to these enterprises in order to make them reach the national level as soon as possible.

Development Preparations Necessary

Hohhot NEI MONGGOL RIBAO in Chinese 10 Oct 79 p 1

[Article by NEI MONGGOL'S Commentator: "Undertake with Great Effort the Commune Enterprises"]

[Text] "The Decision of Central Committee of the Chinese Communist Party on Some Questions Concerning the Acceleration of Agricultural Development"

points out: "Commune and brigade enterprises should be greatly developed, and the proportion of their income in the income of the communes' three-level economic system should be increased gradually." At present, this is a very important policy and measure to speed up the development of our country's agricultural productivity. We must resolutely and thoroughly carry it out and we must undertake our area's commune and brigade enterprises not just on a small scale and not just to achieve small development, but on a large scale to achieve great development.

In recent years, our area's commune and brigade enterprises have achieved a certain development. In 1978, income from commune and brigade enterprises was 16 percent of the total income of the people's communes under the three-level economic system. But compared to the more advanced provinces, municipalities and regions we are still far behind, which is not compatible with the needs for a rapid development of our area's agriculture and livestock industry. Can our area's commune and brigade enterprises experience great development? The practice of some advanced communes and brigades has already given us an affirmative answer. The total income of these commune and brigade enterprises made up over 50 percent of the total income of the individual communes and brigades under the three-level economic system; some of them are even as high as 70 or 80 percent, which creates the material foundation for the rapid development of agriculture and livestock production. The experience of these communes and brigades proves that as long as we strengthen our leadership, adapt to local conditions, fully utilize local resources, using agriculture and livestock farming as the center to undertake enterprises, and follow the road of comprehensive development in agriculture, animal husbandry, industry and sideline production, commune and brigade enterprises will certainly develop greatly.

Our area's vast expanse of land and abundant natural resources also provide extremely excellent conditions for the great development of commune and brigade enterprises. As long as we have a unified plan, reasonable arrangements and establish ourselves with local resources, there is much we can do in cultivation and animal husbandry, in agricultural, livestock, native products and by-products processing industries, in mining and construction, and in nitre, soda and other salt-related chemical industries. Because of the poor condition of our area's communication and transportation and the weakness of the industrial foundation in the rural and livestock areas, many resources are not utilized and many good agricultural and livestock by-products are thrown away or are permitted to rot or go to waste. Now, we shall change this situation and turn the useless into useful, and waste into something precious. This will not only increase national wealth but will also accumulate funds for communes and brigades, promoting production in agricultural and livestock industries and improving commune members' living standard. What can be better than this? Why shouldn't we do it with joy?

In order to make commune and brigade enterprises develop greatly, we must first elevate the understanding of the leaders at every level as to the

importance of developing commune and brigade enterprises. From the present situation of our area's commune and brigade enterprises we can see that if all rural and livestock areas set up such enterprises, if the vast masses of peasants and herdsmen undertake both agriculture and livestock farming as well as industry and sideline occupations, if they combine agriculture, livestock farming, industry and sideline occupations together, then "agriculture", the economic foundation of our nation, will be even stronger and the pace of the Four Modernizations will be even faster. Considering the large amount of capital needed for the modernization of agriculture and livestock farming, government support is necessary, but basically it still depends on communes and brigades to accumulate it. How do communes and brigades accumulate funds? By practicing an "equal allocation" policy? No, that is a wrong policy which harms the masses' enthusiasm and destroys production in agriculture and livestock farming. Can we rely solely on agricultural production? The answer is also no. Because undertaking agriculture alone cannot accumulate enough funds; sometimes it cannot even maintain the simplest re-production. The correct way is to develop comprehensively agriculture, forestry, livestock farming, sideline occupation and fishing; it is to undertake on a great scale commune and brigade enterprises in industry and sideline occupation; and it is to use commune and brigade enterprises as the source of funds for the modernization of agriculture and livestock farming. In 1978, the profit made by the area's commune and brigade enterprises was over 10 percent of the government's total investment in its special projects on the people's communes. If we can develop these enterprises in our area a little faster, manage them a little better and make a little more profit, the communes' investment in agriculture and livestock farming will increase and the modernization of agriculture and livestock farming will be realized faster. This is obvious.

Some comrades do not have sufficient understanding as to the significance of the development of commune enterprises. They have many concerns; they are afraid that the development of commune enterprises will affect agriculture, squeezing it, so they set the development of agriculture against the development of commune enterprises. Some places and organizations have set up their own rules; they don't allow anything to be done. They even use the methods used in the 50's toward private capitalist industries and business in order to limit the development of commune enterprises. These examples show us that in order to make commune enterprises develop greatly, we must continue to criticize Lin Biao's and the "gang of four's" extreme leftist line. As to the various crimes they claimed commune enterprises for, such as "abandoning agriculture and going into business", "using industry to hurt agriculture", "capitalism", etc, we must throw them out completely, liberate our thought, and correct our understanding to guarantee the great development of commune enterprises. There are many types of commune enterprises with broad areas of involvement. Their production has a very close relationship with the related departments above the banner and county levels and with state-operated enterprises. Therefore, to support the development of commune enterprises is the duty of every profession. Planning divisions at every level and all departments of industry, capital construction, transportation, communication, business, supply and marketing, foreign trade,

finance, banking and commodities should not only give commune enterprises support in terms of capital, material and technology but should also make overall arrangements to coordinate fully the supply and sale of products and manage both the state-operated and commune enterprises well. The state-operated enterprises must make themselves a leading example and must give commune enterprises equipment, technology, and support; commune enterprises should produce the products which are allocated by the state-operated enterprises or covered under a contract with required quantity and quality. They must support each other, compete with each other and grow together.

At present, commune enterprises are in a new situation; in this new situation there will inevitably be new developments and new experience. Leaders at every level must prepare overall plans, strengthen leadership, listen to reports periodically, study and solve problems, and sum up and promote the more advanced experiences in order to lead the vast masses to struggle for the elevation of our area's commune enterprises and the realization of the Four Modernizations at an earlier date.

9539

CS0: 4007

SHANDONG

BRIEFS

HOG PROCUREMENT--Shandong Province set all-time records in procuring live hogs and eggs in 1979; 8.99 million head of hogs were procured, 1.66 million head more than in 1978, and 115 million jin of eggs were procured, 15 percent more than the annual procurement task. [SK210900 Jinan Shandong Provincial Service in Mandarin 2300 GMT 18 Jan 80 SK]

CSO: 4007

FARMLAND MUST NOT BE LOST TO HOUSING NEEDS

Shanghai JIEFANG RIBAO in Chinese 13 Dec 79 p 2

[Letter to the editor signed Gan Pang [3927 2397]: "Rural Housing Construction Must Value Farmland"]

[Text] Comrade Editor:

In recent years agricultural production has risen and commune industry has developed, so that a large number of new suburban and rural homes have been built. I have discovered, however, that at the same time there has developed a tendency toward reckless requisitioning of collective farmland, which is contrary to regulations. Recently, this problem has worsened.

I have at hand a list which shows one suburban commune's 1979 permits for commune members to requisition farmland for housing construction.

During the first 6 months 235 homes were constructed, requiring 60 mu of arable land.

During the latter 6 months 235 homes were built, requiring 46 mu of arable land.

These total 106 mu, and adding another 124 mu surrounding the homes, a grand total of 230 mu of farmland was lost.

By 25 October, 179 homes with 585 rooms were built throughout the commune, occupying 78 mu of farmland. This use of land for housing construction does not even include granaries, sheds and other collective buildings as yet without permits or where amount constructed exceeds amount given permits. It is said that similar conditions exist in varying degrees in other suburban county communes

I believe that the main reasons for this indiscriminate use of cultivated land are that construction of new rural housing is no longer emphasized, the vacillating policy on land use for housing construction, the readjustments in private plots, and because the concrete policies were not re-clarified. A few years ago there was emphasis on planned construction of new rural housing and storied buildings. This unquestionably was the direction, but this year there is no such emphasis on new rural housing construction. The private plots taken during construction of housing on field-crop land (from which the private plots originally were taken) have been restored. This has spurred some people on to rush into construction of one-story buildings on field-crop land in the hope of occupying more of this land.

I therefore venture to make the following few recommendations:

1. New rural housing construction should emphasize buildings over two stories high, which would conserve land and attain uniformity. Commune members who urgently require housing but are faced with economic difficulties and cannot build storied buildings right away must construct single story buildings on the old housing sites and cannot occupy field-crop land.

2. I recommend that the concerned departments conduct an investigation in order to draft "land requisitioning laws" and submit them to a meeting of the Municipal Peoples Congress for examination and approval. The indiscriminate, reckless use of land will be restrained by law, firmly preventing people from doing what they wish in whatever way they want.

3. In the current stage, there are a number of regulations which must be revised. Especially important is rapid, resolute action to take up the right to requisition land. The present rate of use of some commune side-line industry buildings is quite low and should be reformed, which will conserve land. All counties and communes should use investigations and research as a basis on which to formulate long-range planning for new rural housing in each county and commune. There should be little or no requisitioning of cultivated land. There must also be strict control of land requisition by the state or county and town collective units. The less land requisitioned the better. Please do not lightly take over the production teams' "right of self-determination" regarding land.

A Reader, Gan Fang

11582
CSO: 4007

'JIEFANG RIBAO' REPORTS FARM PRICE INCREASE IN SHANGHAI

Shanghai JIEFANG RIBAO in Chinese 1 Nov 79 p 1

[Report by JIEFANG RIBAO correspondent: "Peasants Benefited by Higher Farm Prices"]

[Text] Beginning from April 1979, in accordance with the regulations of the State Council, the Shanghai municipal authorities concerned have continued to raise the state procurement prices for 12 principal agricultural products, fruits and vegetables while cutting down the prices of eight insecticides, including phosphorous amonia, new antibiotics and multi-purpose antibiotics, and concrete hulls for agricultural use. Because the level of production and commodity standards in suburban Shanghai are generally higher than the rest of the country, the peasants there are expected to benefit more from this price increase than their counterparts elsewhere. Their increase in income from sales of their farm products to the state from 1976 through 1978 was estimated by the authorities concerned at 140 million yuan. Adjusted for his increase expenses caused by higher feed prices during this period, each peasant in suburban Shanghai could have his income increased by 20 yuan or more compared to 8 yuan each for his counterparts in other parts of the country.

This important decision to increase the procurement prices for agricultural products has inspired the broad masses of peasants to work harder to promote production. Following bumper harvests of summer crops, rapeseeds and early rice in suburban Shanghai, peasants there were eager to sell their farm products to the state. The procurement of summer crops, early rice and rapeseeds exceeded last year's by 30 million catties, 40 million catties and 480,000 catties respectively. As far as the summer and early autumn crops are concerned, the annual procurement quotas are now 93.48 percent completed. Cotton output is expected to be lower than last year due to unfavorable weather. But cotton growers still can expect an income close to their last year's because of the decision by the state to raise the cotton procurement price. A farm product which has benefited most from the price increase is live pigs, which accounted for approximately 35 percent of the overall increase in income from the price hike. There has been a booming market for meat this year. From April, a month in which farm prices were raised, through

September, the procurement of pigs increased by 730,000 head to 2.01 million head above the corresponding period of 1978. So far, the procurement of cattle, sheep and eggs has already overfulfilled the annual quotas.

The decision by the state to make the peasants a major beneficiary of the farm price hike has greatly increased their savings and expendable cash. It has also brought an unprecedented prosperity to markets in suburban Shanghai. In the first 9 months of this year, the retail commodity sales there were 20.75 percent higher than in the same period of 1978.

9574

CSO: 4005

SHANGHAI

BRIEFS

SHANGHAI SEED COMPANY ESTABLISHED--In response to the needs of agricultural modernization the Shanghai Seed Company has been established. According to the line, direction and policy of the Party Central it was organized to perform the tasks of breeding improved varieties, seed selection introducing fine varieties, testing, appraisal, demonstrating, examining and approving, breeding and popularizing and purifying and rejuvenation; to organize and lead in the construction of a seed base; to manage the seeds for improved, original, hybrid and parent varieties of such crops as grain, cotton, oil and vegetables; to act on behalf of the seed importing and exporting enterprises; to organize the trial manufacture, popularization and management of specialized seed machines, material and equipment; to train seed technology personnel and organize technology exchange. [Text] [Beijing WEN HUI BAO in Chinese 20 Oct 79 p 2] 11582

CSO: 4007

TIANJIN

TIANJIN GRAIN, OIL PROCUREMENT EXCEEDS 1978 LEVEL

Tianjin TIANJIN RIBAO in Chinese 17 Dec 79 p 1

[Article by Zhu Shaozhang [2612 4801 4545] and Jing Zhenqing [0064 2182 3237]: "Tianjin Autumn Grain Procurement Progresses Rapidly and with High Quality: Grains and Oils Enter Storage with Increases over the 1978 Period of 33 Percent and 100 Percent, Respectively"]

[Text] Building on the foundation of the summer bumper grain crop, the Tianjin suburban and county rural areas also harvested a better autumn grain crop. This year's total food-grains production is estimated to reach over 1.6 billion jin, a 10 percent increase over the 1978 period. By 5 December, the municipality had procured over 320 million jin of food-grains and 2.2 million jin of oils, increases over the 1978 period of 33 percent and 100 percent, respectively. Not only have the grain and oil rapidly gone into storage, the quality has also been very good.

The Third Party Plenum's two documents regarding agriculture and the thorough implementation of all the economic policies motivated the socialist positivism of Tianjin's broad rural commune members, who, following the principle of consideration for the state, collective and the individual, enthusiastically sold their good, surplus grains. Many brigades increased their production and contributions, and took the initiative in requesting the task of increased procurement and in supporting the state's construction of the four modernizations. After completing the commune's procurement responsibilities the cadres and masses of the Jinghai [7234 3139] county Dahaozhuang [1129 6787 8369] commune immediately pressed on to overfulfill their quota by making another 800,00 jin of grain sales. This not only increased the brigade's capital resources but also increased the members' income by an average of 8.37 yuan per person. Because the broad masses of every brigade are enthusiastically making sales, Tianjin grain procurement has proceeded rapidly. At this time Xijiao [6007 6738]

ward and Jinghai and Jixian [5636 4905] counties have already overfulfilled their procurement tasks. The autumn grain in storage has low moisture content, few impurities and the quality is much higher than last year.

In an effort to excel in the task of procuring grain and oil, all grain departments got an early start and mobilized the personnel to clear out, incorporate, inventory and disinfect the granaries, mustered a large quantity of sacking machines, made rational plans for filling the granaries, and moreover trained a total of over 5,000 quality inspectors for all of the production teams. After the procurement process began, they also sent a great number of people to the brigades to broadly propagandise the party's foodgrain policies, which are quality inspection to take place in the field and at the granaries, price based on quality and prompt delivery to the granaries. Each granary and station allocated sufficient manpower to guarantee that the correct amounts of grain arrived at the correct times, used all possible means to facilitate the brigades' sales, and greatly speeded up the filling of the granaries.

11582
CSO: 4007

XIZANG

BRIEFS

AFFORESTATION WORK--The Xizang regional people's government recently made a decision that local forestry departments may allocate parts of state forests to collectives or individuals while retaining ownership. In regions with vast areas of barren hills and wasteland, stretches may be allocated to communes or production brigades for planting timber forests or economic forests, and a small portion may be allocated to commune members for afforestation. The Xizang autonomous region has a vast area of forests, with the unattended area reaching more than 20 million mu. Therefore, when the decision was announced, it received enthusiastic response from the people. The decision has also boosted people's enthusiasm in promoting afforestation. [OW191415 Lhasa Xizang Regional Service in Mandarin 1100 GMT 18 Jan 80 OW]

AGRONOMICAL SOCIETY--The Xizang regional agronomical society held its inaugural meeting in Lhasa on 10 January. Over 400 agricultural experts, technical personnel and representatives of peasants from various parts of the autonomous region attended the meeting. Also attending were leaders from the regional CCP Committee, the Standing Committee of the regional people's congress, the regional people's government and the regional CPPCC Committee. Representatives from the agronomical society of China were also present at the meeting. Vice Governor Li Benshan greeted the inauguration of the society. (Zhao Qinwen), director of the regional agricultural department, made a report on agricultural production in the region and explained future tasks in developing agriculture and animal husbandry in the region. [Lhasa Xizang Regional Service in Mandarin 1100 GMT 11 Jan 80 OW]

CSO: 4007

BRIEFS

SHAOXING PREFECTURE GRAIN OUTPUT--Shaoxing Prefecture has increased annual grain output by 900 million jin twice in the last 2 years. This year the prefecture's average per-mu grain output has reached more than 1,400 jin. Beginning next year, the prefectural leadership has decided, 3 percent of the prefecture's farmland will be set aside for the communes and brigades to develop a diversified economy. [OW010903 Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 23 Dec 79 OW]

JINYUN COUNTY WATER CONSERVANCY--After learning a lesson from the disastrous collapse of a water reservoir, Jinyun County, Zhejiang Province, realizes that measures in violation of the procedures of building capital construction projects must be corrected. During the No 10 typhoon in 1979, the water reservoir of the (Tanxi) power station collapsed before water reached its designed level. As a result, more than 20 mu of farmland were flooded, some equipment at the power station was damaged and some people and animals were injured or killed. The accident caused a loss of more than 100,000 yuan in damage. The collapse was caused by the lack of proper design and geological data and the failure to proceed with the work according to original plan. To prevent occurrence of similar accidents, the county ruled that careful designing of projects must be completed, approval by the leading departments concerned must be obtained and technical procedures must be specified and observed before construction projects are started. The county also demands that quality and safety at the projects be guaranteed. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 12 Jan 80 OW]

AFFORESTATION WORK--Zhejiang Province has achieved fine results in forest production this year. It has afforested 2.04 million mu of land, 16 percent over last year's record, and built 870,000 mu of forest bases. By the end of November, the province produced 569,000 cubic meters of lumber and 23,000 cubic meters of various kinds of plywood, topping the figures registered in the corresponding period of last year by 10 percent and 45 percent respectively. [OW290901 Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 20 Dec 79 OW]

MOUNTAIN ECONOMY--Zhejiang Province satisfactorily carried out economic construction in mountainous areas in 1979. Some 2.04 million mu of land

were afforested, topping 1978 by 290,000 mu. Total grain output in 15 mountainous counties, including Qintian and Yongjia counties, topped 1978 by more than 200 million jin. Numbers of oxen and goats in 25 hilly counties in 1979 were 426,390 and 473,200 head respectively. The number of rabbits in 26 hilly counties was 2.1 million head. [OW151107 Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 13 Jan 80 OW]

ZHEJIANG LIVESTOCK PROCUREMENT--In 1979 Zhejiang Province procured 11.15 million head of hogs, 5.96 million head of poultry and 74.95 million jin of eggs, topping 1977 by 100, 50 and 500 percent respectively. By selling hogs, chickens and eggs, commune members throughout the province earned income totaling 939 million yuan, an increase of 412 million yuan, or 127 percent, over 1978. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 13 Jan 80 OW]

ZHEJIANG AGRICULTURAL LOANS--Agricultural loans provided by people's banks and rural credit cooperatives in Zhejiang in 1979 totaled more than 910 million yuan, an increase of 63 percent over 1978. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 10 Jan 80 OW]

ZHEJIANG RURAL SAVINGS--Savings deposits of rural commune members in Zhejiang in 1979 increased by 195.8 million yuan, equivalent to 3.4 times those in 1978. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 10 Jan 80 OW]

ZHEJIANG LIVESTOCK BREEDING--Zhejiang has scored marked achievements in livestock breeding this year. Now there are 26.97 hogs (3.23 million more than in 1974), 3.36 million sheep (230,000 more than in 1963), 6.5 million rabbits (some 2 million more than in 1978), and 842,000 cows (some 16,000 more than last year's figure). This year, the total purchase of hogs, meat goats, beef cattle, poultry, fresh eggs, daily products, honey, animal skins and fur is worth 1.1 billion yuan, 580 million yuan more than last year. [OW021305 Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 23 Dec 79 OW]

ZHEJIANG METEOROLOGICAL WORK--During the first year of readjusting the national economy, the meteorological department of Zhejiang Province focused its work on serving agriculture with good forecasts, thus contributing to overall bumper harvests. Correct weather information provided by all 49 meteorological observatories in the province in late March and early April last year enabled the peasants to successfully carry out early rice planting in 18 million mu of rice fields in the province. Timely information on No 9 and No 10 typhoons also helped to prevent various regions in the province from suffering serious damage. To further integrate meteorological work with the practice of agricultural production, the provincial meteorological department has organized a weather information network for agriculture in various regions of the province. In 1979, the department had also successfully induced rainfall artificially in 35 counties. [OW111351 Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 10 Jan 80 OW]

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